AUGUST 1952

American Engineer

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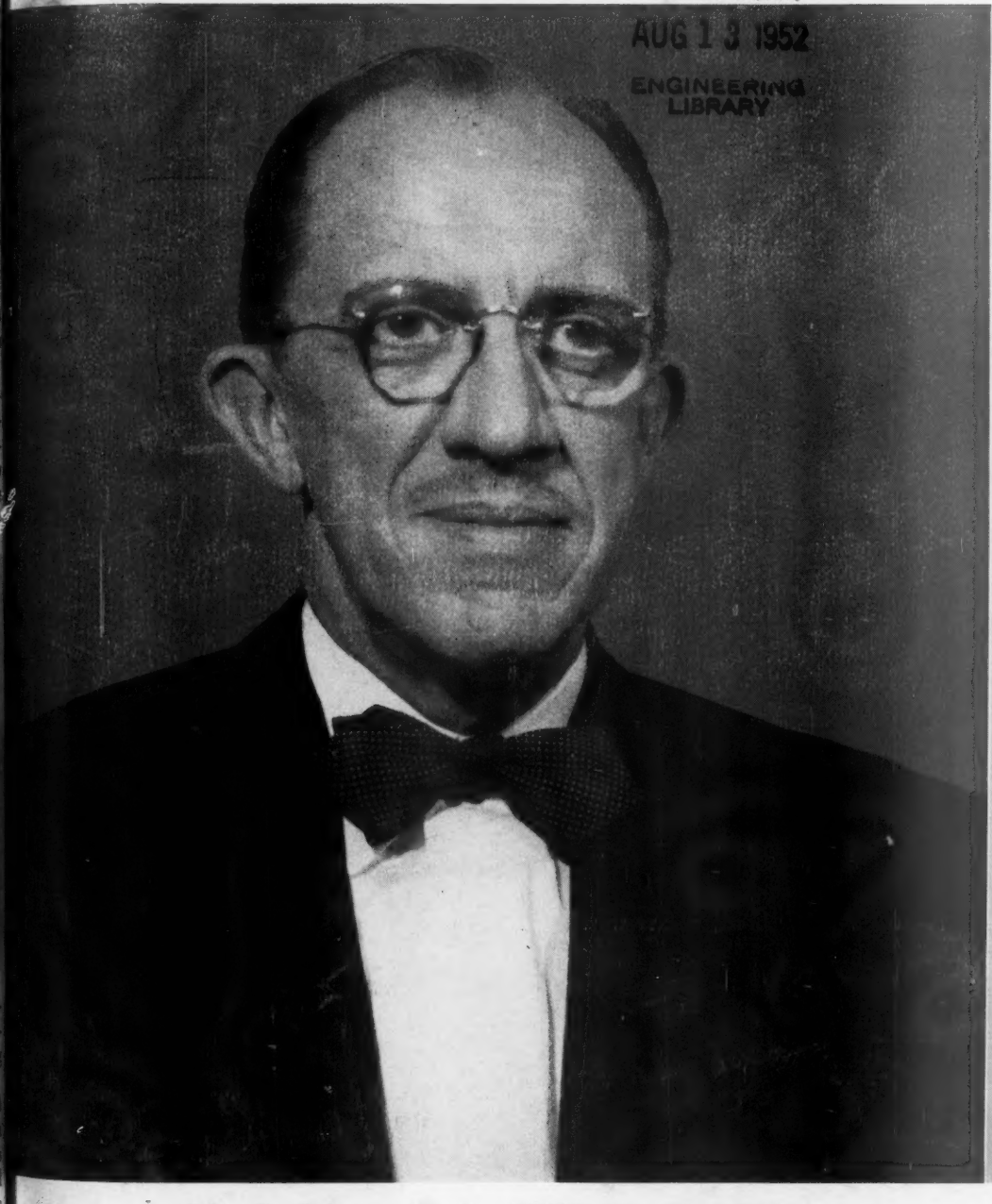

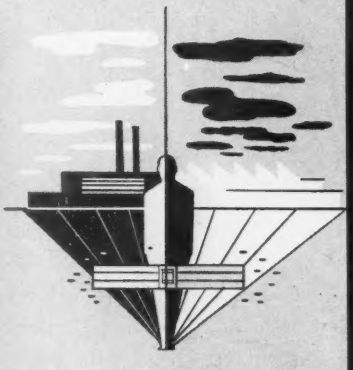

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
FOUNDED 1934

John D. Coleman, P. E.—NSPE's New President

. . . ten features of interest to professional engineers

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American Engineer

Letters

Friendly Senators . . .

Dear Editor:

Upon reviewing N.S.P.E.'s Legislative Bulletin of June 20, the thought came to me after reading the impressive remarks made by Senator John M. Bricker and Senator Ralph E. Flanders to ask you if a sizable notice could be incorporated in our next issue of the AMERICAN ENGINEER with the following suggestion.

Requesting all our members throughout our country to send a letter to these two senators and congratulate them for their extreme intelligence in classifying our profession as one of the top three that humanity depends upon.

As you know, people are very quick to file protests when they believe things are wrong, so I feel our approbation should be expressed on an occasion such as this Senate debate. And every professional engineer in our country, worthy of the name should send to these two fine gentlemen his vote of thanks in helping us to achieve distinction.

Trusting that our professional society will act as "minute men" and respond by thus aiding the advancement of our cause. With my very best wishes to you in all your undertakings.

THEODORE W. HEINZERLING, P.E.,
Hicksville, N. Y.

▶Reader Heinzerling has a fine suggestion, we think. Below are the quotations to which he refers.—*Editor.*

Senator Bricker: **"Engineers are professional people, just as lawyers, doctors, and accountants. It is very difficult to regulate the salaries of professional people."**

Senator Flanders: **"I should like to say a word about the peculiar characteristics of the engineer as compared with the best technical worker in the shop. The professional engineer does not simply perform a routine duty, no matter how well it must be done. He is a creative person, and we cannot apply salary controls to such a man."**

Lauds Board Action . . .

Dear Editor:

I am very pleased to see, according to the Legislative Bulletin, and the July issue of the AMERICAN ENGINEER, that our Board of Directors, "at its recent meeting in Tulsa, Okla., took a stand in favor of the use of private enterprise in the development of natural resources and particularly cited the Niagara Power legislation and Hell's Canyon project on the Snake River as instances where legislation has been proposed which violates the private enterprise development principle."

The members of the board are to be commended. They have acted wisely in the interest of future freedom in this nation and the world.

N. E. TROSTLE, P.E.,
Brownwood, Texas

Economics And Unity:

Dear Editor:

Most of the current articles on "Engineering Unity" are unworthy of their purpose. While paying lip service to the principle of Unity, each organization is unyielding and self-righteous when the methods of obtaining Unity are discussed.

The "Founder Societies" (AIEE, ASME, etc.) have clung so blindly to an unworkable and unworthy plan of a super-society without members that they now find themselves to be Technical Societies without respect or influence when seeking to speak on Professional matters. As a perfectly natural reaction to the deaf ear turned toward engineers interested in the economic facts of life by the Technical Societies, there came into being at Chicago on June 1st the "Engineers and Scientists of America."

This organization with the "front" type of name is no more interested in Unity than the Technical Societies. They have not only eliminated from membership all groups containing supervisory engineers but also all groups not certified by the NLRB. In many respects they are similar in thought and action to labor unions. The ESA will undoubtedly be an aggressive organization having inherent appeal to the great numbers of young engineers caught in our inflationary spiral of rising costs of living.

Engineers have a very high regard for the "Laws of Nature" otherwise they would not be engineers. As a group however, even those most interested in economic improvement, are prone to overlook a natural law, the law of "Supply and Demand." There is no factor in existence today which influences the economic level of the engineering profession except through operation of this law.

In our present semi-war-time economy, with so called "shortages" of engineers, nothing is written, and little spoken, regarding action to operate on the law of Supply and Demand. However, the NSPE is in a unique position as regards the operation of this law and if it is to take advantage of this position must find a means of doing so without offense to the general public. The registration of engineers can improve and insure the quality of engineering services and hence increase the Demand for engineers. It can also obviously control the Supply.

Because of its ability to operate on the law of Supply and Demand and because of its established legal position, it appears that the NSPE could be a basis for a Unity organization as recommended in the EJC minority report. As it stands today the NSPE is not acceptable to a majority of the engineers in this country. It is unacceptable for two reasons.

First, its membership *requirements* are too exclusive. While universal registration of engineers is desirable it is not yet even in the majority. An additional grade of membership must be established on a national and uniform basis rather than the "local option" type of affiliate grouping now in operation. This membership might be available to an individual only a certain number of years, to encourage him to become registered. While this member should vote, possibly he should not be eligible for office in the Society.

The second unacceptable aspect of the NSPE is its susceptibility to management domination, as befell the Technical Societies. A possible solution to this would be, as with unregistered engineers, to prevent engineers above a certain level of management from holding office in the Society.

If the NSPE is to become a Unity organization it must present its selling points to the employed engineer and prove to him that it is adaptable to change. With the present day trends toward legal and political protection and promotion of "labor" types of organization the fight will not be

(*Continued on page* 31)

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American Engineer

AUGUST
1952

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—C. F. Kettering

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Chairman, Publications
Committee, NSPE

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A Message from NSPE's New President, John D. Coleman

In accepting the office of President of the N.S.P.E. for the administrative year 1952-53, I realize only too well that it involves a tremendous responsibility. I am also aware that, like promotions in industry, it is not an award for past performance but a challenge and opportunity for increased service. For this evidence of confidence I am deeply grateful, and shall do my utmost to be worthy of this faith and trust during the coming year.

From all indications it seems that we are just on the threshold of the golden age of engineering when the engineer's material contributions to our civilization are constantly reaching new heights. At the same time we are witnessing an increasing recognition and acceptance of his vital role in lengthening and strengthening man's arm through technology, and providing him with great material comforts and conveniences; progress that even Jules Verne did not envision.

This recognition will certainly not be entirely automatic and will come sooner and in greater measure as we are able to achieve true workable unity in the profession. If we can expand our service to the profession and the public to a sufficient extent, and integrate the majority of professional engineers in our organization, the question of who should and can represent the profession will be largely academic.

In the meantime we must continue and even accelerate our cooperative ventures with the technical engineering societies and demonstrate that we are more concerned that jobs be done than who should receive credit. In September of this year, we join with many other technical and scientific societies in commemorating the 100th Anniversary of the founding of the American Society of Civil Engineers, and every effort must be made to provide adequate recognition to the century of service to the profession and our country by this great technical society.

It seems to me that we have five major objectives and challenges that we must meet during the coming year if we are to make the most of the opportunity that is presented. These are: (1) to expand our membership substantially; (2) to improve inter-society relations; (3) to establish and implement a sound program in regard to unionization of engineers; (4) to expand our public relations program; (5) to assist in better use of engineers in this period of increased demand.

While we cannot consider that all registered engineers are actually potential members we should set as our long range objective at least 50%. If this percentage were members today, and it has been exceeded in some states, we would have over 75,000 members and there would be little question of our status in the profession. While this may seem to be an overly ambitious objective, I am fully convinced that it can be achieved if we can develop a widespread spirit of personal evangelism and provide the proper material and counsel at the chapter level where the job must be done.

Space for this message permits only a short listing of the major challenges faced by the Society in the coming year. Unfortunately, NSPE's ability to meet its opportunities are limited at the moment by the spiral of increasing costs. Recently I compared some of our basic costs in 1947 (at the time our current dues structure was put into effect) with those of today, and found some of our costs had increased by as much as 300%. The problem the Society faces today is that of meeting the challenges of expanded opportunities and demands; developing programs and activities of value to its membership, of maintaining existing programs and activities developed over the past several years and accomplishing all this in the face of rising costs and a static dues structure.

It becomes more apparent every day that if we are to continue leadership in professional matters, members of the Society, in the not too distant future, must authorize a dues increase to offset the expenses incurred. We cannot build and share the benefits of a professional organization without being willing to underwrite the expenses of its development.

It has been my observation that we have usually enjoyed at the grass roots excellent relations with other engineering societies and there has been united action at the national level in a number of instances, but at times there has been undue concern in regard to who receives the credit for the accomplishments. We need to develop policies and programs designed to present NSPE and its objectives in a more convincing light to the technical societies.

We should be properly concerned in regard to any increase in the number of bonafide engineers who find it necessary to join any organization as a condition of employment. We need to educate both engineers and employers to the fact that collective bargaining submerges the individual and tends to bring everyone to the same common denominator. This is in contrast to the professional concept which envisions individual responsibility and recognition on the same basis. In general, engineers

(Continued on page 31)

Professional News in Capsule Form

AIA Increases Dues $10 for PR Program • Hollister Calls for Profession's Reorganization • Steinman's Hands Form Design for Commemorative Stamp • Other Items of Interest

Worried over what they termed the "encroachments" of building contractors and government bureaus in their field, members of the American Institute of Architects authorized at their recent meeting a $100,000 war chest to protect and promote the rights and interests of the private practitioner and planner.

Delegates attending the eighty-fourth annual convention of the institute in New York approved what was called a special public relations program calling for the expenditure of that sum annually over a period of not less than three years.

The program will seek to utilize the 19,000 registered architects in the country, including 9,200 A. I. A. members, to acquaint the public more thoroughly with the vital part these men play in construction and community planning.

The program will operate through the 105 chapters of the institute. The plan will be financed by increasing each member's dues by $10 a year, with that amount to be earmarked directly for public relations purposes.

* * *

"The way to end the shortage of engineers is to pay engineers more than you pay laborers," says James P. Growdon.

After more than 25 years association with the hydraulic engineering operations of Aluminum Company of America, Growdon recently retired as chief hydraulic engineer for Alcoa to become consulting hydraulic engineer.

Commenting on the engineer shortage, Growdon said:

"Now steelworkers earn more than young engineers. That isn't right. Until you cure that you'll have an engineer shortage . . ."

* * *

S. C. Hollister, Dean of the Cornell University Engineering College, said recently that a complete reorganization of the profession of engineering was imperative if demands of the national economic system were to be met.

Addressing the sixtieth annual meeting of the American Society for Engineering Education, of which he is president, Mr. Hollister held that only 120,000 young men and women of requisite intelligence were available each year for such professions as medicine, law and science.

Mr. Hollister said that surveys indicated the present needs of engineers in industry and other agencies to be on the order of 80,000 and that the institutional output of such graduates was 20,000 or less. He declared that engineering was drawing "just about its maximum" of 38,000 freshmen, and suggested the training of aides, like those in medicine, as a partial solution to the problem.

Willis B. Woolrich, dean of engineering at the University of Texas, was elected president.

* * *

In the opening address of the Conference of Design at Aspen, Colo., recently, Buckminister Fuller, well known engineer, predicted that the entire world would be industrialized by the year 2,000 and that 100 per cent of the "human family" would enjoy at that time the highest technical advantages available to anyone.

"In 1900," Mr. Fuller said, "less than 1 per cent of the human race enjoyed these advantages, as they existed at that time. At present 26 per cent enjoy them, at a much higher level of development."

The curve is rapidly rising, according to Mr. Fuller, and the 50 per cent mark will be passed in 1970, after which time more than half the human family will belong to the privileged class and the underprivileged will be a diminishing minority.

* * *

The hands of the engineer shown on the new commemorative postage stamp celebrating a century of engineering progress in America, belong to Dr. D. B. Steinman, NSPE's first president, and the recent recipient of the Society's award for outstanding service to the profession. The stamp, which will be first issued at Chicago on September 6 during the Convocation of the Centennial of Engineering, shows the hands of the engineer working with engineering instruments on the plans for a suspension bridge. Below the photograph is a perspective drawing of a bridge, and above the hands is the quotation from John Ruskin: "Therefore when we build, let us think that we build forever."

* * *

Engineers can be a potent force for international peace, Truman S. Fuller, retiring president of the American Society for Testing Materials, said at the second-day sessions of its fiftieth anniversary meeting in New York.

Mr. Fuller, engineer in charge of the works laboratory of the General Electric Company at Schenectady, N. Y., cited gains through international cooperation of members of the engineering profession.

"Standardization," he said, "offers a potential opportunity for a better understanding among the peoples of the world."

The society, Mr. Fuller added, has developed 1,800 standards in its fifty years, with the period witnessing remarkable improvement in the science of testing.

H. L. Maxwell, supervisor of mechanical engineering consultants of E. I. du Pont de Nemours & Co., Inc., was elected president of the society for the coming year. N. M. Mochel, manager of metallurgical engineering of the Westinghouse Electric Corporation, was chosen vice president.

* * *

New York University has named Dr. Thomas C. Kavanagh Professor of Structural Engineering and Chairman of the Department of Civil Engineering. He was formerly Professor of Civil Engineering at Pennsylvania State College and assistant professor at New York University.

Dr. Kavanagh has specialized in research concerning bridges and structures. He won prizes for bridge designs from the James F. Lincoln Arc Welding Foundation.

As secretary of the United States Council of the International Association for Bridge and Structural Engineering, he has been active in promoting an interchange of research and design information.

(*Continued on page* 15)

Engineering students from University of West Virginia set up underground.

Professional Engineers Are Doing New and Wonderful Things With Man's Old Friend

THE ENGINEER—KEY TO COAL PROGRESS

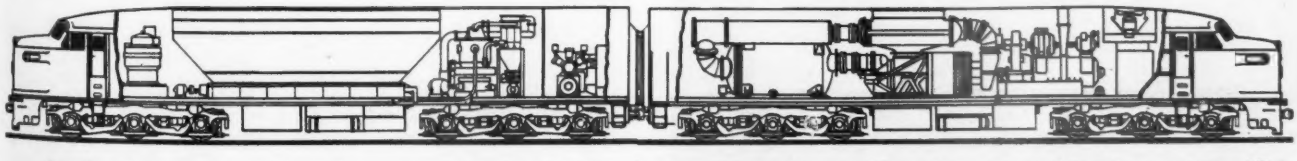
By AUGUSTINE B. KELLEY,
Member of Congress from Pennsylvania

LAST month I remarked to a colleague from California that one of my sons was receiving a doctorate of mining engineering at Pennsylvania State College and would now—after long years of school, war, and more school—be able to give full time to a career in the bituminous coal industry. My western friend was somewhat surprised that a young man would seek so high an academic degree in order to prepare for a lifetime of work in coal. He was actually amazed when I told him that each year more than 250 engineering school graduates move from the campus right into the coal industry. He went on in much the same vein:

"I can understand that there would be a need for some engineering consultants," the gentlemen observed, "but what would the coal industry do with so many college graduates . . . particularly since there is a declining need for coal in modern civilization?"

There are many places—in production, preparation, transportation, and utilization—where professional engineering talent is required in the coal industry, and I shall discuss these duties on the premise that not even all members of the engineering profession are familiar with the situation. But first I should like to correct the general misconception as expressed by the congressman from California—that the need for coal is declining.

While it is true that the upward trend of coal consumption has been temporarily checked by growing competition from petroleum and natural gas, coal remains America's predominating source of mechanical energy. Despite the network of pipelines that carry gas and oil to the 48 states without the oppressive transportation costs that coal must bear, coal accounts for 44 per cent of the mineral fuels and power (exclusive of the markets in which coal does not compete) used in the United States.



Another important engineering research project is the development of a coal-burning gas turbine locomotive. This locomotive (above) would to a certain extent put the principle of the jet airplane to work. It would be a coal-fired power plant that requires no water, either for steam or for cooling.

Can America's coal industry produce a billion tons a year? Yes, says the author, with the engineer's help.

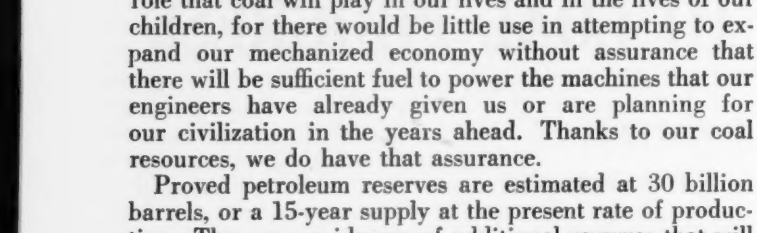
America's demand for fuel is continuing to increase by leaps and bounds. Her need for all fuels is growing faster under the extra stimulus of a rearmament program. But, even without the threat of war, authorities agree that there will be no letup in the nation's growing demand for fuel.

As men of science, members of the National Society of Professional Engineers will be particularly interested in the long-term reserves of our various fuels. It is the consideration of reserves that heavily underscores the key role that coal will play in our lives and in the lives of our children, for there would be little use in attempting to expand our mechanized economy without assurance that there will be sufficient fuel to power the machines that our engineers have already given us or are planning for our civilization in the years ahead. Thanks to our coal resources, we do have that assurance.

Proved petroleum reserves are estimated at 30 billion barrels, or a 15-year supply at the present rate of production. There are evidences of additional reserves that will undoubtedly extend the period of availability, but manifestly the long-range future of our domestic supplies of oil is surrounded with uncertainties.

PROVED natural gas reserves measure 180 trillion cubic feet. Figured at last year's 6½-trillion-cubic-feet rate of consumption, our supply would last another 20 years. Undoubtedly there are other stores of recoverable reserves yet to be found, but how long they can replace the depleted reservoirs is problematical. Gas consumption—which has more than doubled in less than a decade—continues to increase, and fuel experts are advocating a conservation program for reserves and urging against wasteful uses of supplies.

Formed centuries ago, experts say we still have 1.2 trillion tons of coal underground in the U.S.



Official government sources have attempted to call the nation's attention to the dwindling supplies of petroleum and natural gas. Soon after the beginning of hostilities in Korea the Munitions Board issued a special memorandum to all offices of the Defense Department urging that military installations and other defense establishments give preference to coal whenever possible, because of its abundance and the danger of shortages in other fuels. Executives in the Department of the Interior, from Secretary Chapman through the Bureau of Mines, have constantly urged that private industry undertake the construction of synthetic fuels plants, using coal as the source of liquid fuels and gasses, as the only means of supplying the nation with the energy it will require in the years ahead.

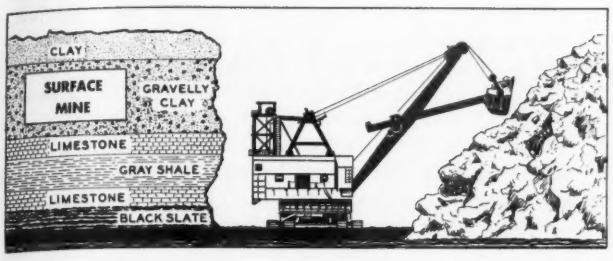
Estimates of the U. S. Geological Survey set the amount of actually recoverable reserves of coal in this country at 1.2 trillion tons. Current production is in the vicinity of 550 million tons. If, as experts predict, the demand for coal will rise to one billion tons annually by 1975, there still need be no worry about depleting our coal resources for more than a thousand years.

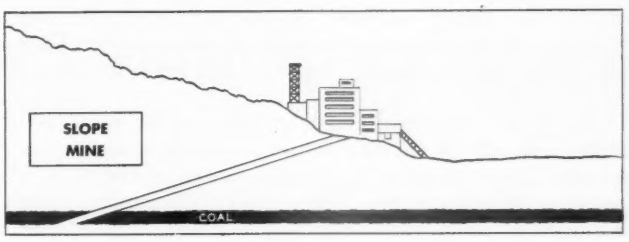
What about the ability of the coal industry to produce as much as a billion tons a year? Assuming that war conditions do not deprive the industry of necessary manpower and materials, there is no question but that this capacity can be reached whenever the demand arises. The reason why the industry can make this promise with confidence is that coal mining in the U.S.A. has become so highly efficient. The engineer has mechanized the mining, loading, and transportation of coal, and as a result the average man-day output in American mines has reached the astonishingly high rate of seven tons. By comparison, in Polish mines—presumably the most efficient in the Soviet domain—the figure is about two tons per man-day, and in Great Britain the man-day average is 1.7 tons. Elsewhere in Europe the figure is still less, while the Japanese—the top Oriental miner—cannot average any more in a full month that the American miner does in a single day.

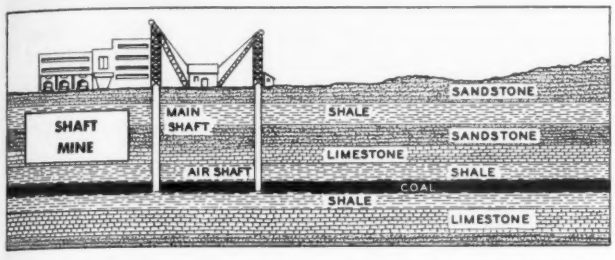
A trip inside a modern American mine will explain immediately why we have such an outstanding productive capacity. Engineers have devised electrically-operated mobile machines with long blades that cut deep into the coal at the face of the seam. Automatic drills follow the cutting machines and bore uniform holes into which explosives may be tamped so that the charge will loosen the coal and make it ready for loading. One of the more recent developments in this phase of mining is the introduction of compressed air—a substitute for explosives—as the medium of breaking the coal. Small cylinders are inserted into the holes at the working face, after which air is released into the cylinders with such force as to cause the block of coal to break apart and fall to the floor for loading.

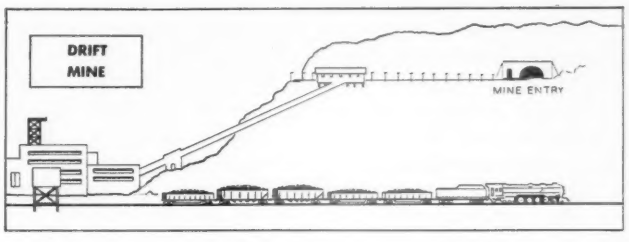
Whereas all coal was once loaded by hand, the shovel has now largely been replaced by electric loading machines capable of scooping up as much as six tons of coal a minute, and drawing the load on a conveyor belt for the first leg of its trip to the surface. The transfer to an underground railroad or belt is usually made through the medium of an electrically-drawn shuttle car that carries as much as ten tons of coal from the working room to the

America Produces Coal From Four Types of Mines









underground railroad or conveyor belt along the main haulageway.

In surface mining, which accounts for about 20 per cent of the total output of bituminous coal, giant shovels and draglines remove overburden from the coal bed, mechanical sweepers clean the surface of the coal, and then other electric shovels scoop it up and load it onto trucks. This amazingly efficient productive system has been wrought by the genius of engineering talent employed by coal operators and allied industries, and put to practical use by far-sighted management and a working force of skilled technicians.

But merely developing new machines and techniques, and installing them inside the mine, does not in any way complete the job of the engineer. Nor, for that matter, does it include all the engineering skills necessary even for the proper opening of a mine: the determination of the location of the coal seam; how it should be worked; the proper approach, whether by shaft or otherwise; and the actual setting up of the vast underground factory.

Accomplishment of these preliminary tasks signifies only the beginning of the job for the mining engineer, the electrical engineer, the mechanical engineer, and the safety engineer. Safety must be the foremost consideration in every case, and there can be no relaxing of the safety measures that have already been devised and in the research for further developments designed to keep accidents at the absolute minimum. In recent years accidents have been reduced through better mine lighting, ventilating systems, dust control, communication apparatus, and roofing—all engineering developments. One of the more significant advances in mine safety is roof bolting, which makes overhead layers of rock self-supporting by actually binding them together.

Outside the mine is another symbol of engineering achievement. It is the preparation plant, where the slate and other impurities are separated from the coal, which is then screened and sized according to consumer specifications. Chemical engineers analyze the coal while it is being treated at these expensive "coal laundries."

Through upgrading of the quality of coal by the fuel technologists, and with consequent improvement in boiler equipment and firing techniques by combustion engineers, the efficiency of coal has increased considerably in recent years. Engineering research and development have —for example—brought vast savings to the electric utilities industry, where today one pound of coal goes as far in the generation of power as three pounds did thirty years ago.

But neither the coal industry nor the power companies are satisfied that further advances are beyond reach. Utilities are now consuming in excess of 100 million tons of bituminous coal annually, and within another quarter-century that figure will likely be tripled. One utility company has described this inter-dependence in this way: "The miracle of electricity is the climax of an industrial romance involving closely coordinated teamwork between the coal and electric power industries." An electric power company in New Jersey and a coal producer in Pittsburgh have begun a "cadet exchange" program, in which young engineers are interchanged for extended training and orientation courses so that each group will learn at first hand the production problems of each other's industries.

Such a program may be the forerunner of similar plans by other coal consumers and the coal industry. In any event, there are unlimited opportunities for the engineer in the field of coal utilization. Consider the possibilities in synthetic fuels alone!

As I have mentioned earlier, the conversion of coal into synthetic liquid fuels has been given an obvious national significance by the concern over the nation's future oil and gas supplies. Spearheading the campaign for the development of a commercial synthetic fuels industry, the U. S. Bureau of Mines has for sometime been producing gasoline from coal at an experimental plant in Louisiana, Mo. The same process—hydrogenation—was proved practical by the Germans during World War II, when much of the gasoline for the German air force was made from coal.

Since the chief chemical difference between coal and petroleum is the latter's higher hydrogen content, this process combines coal with hydrogen under high temperature and pressure with the aid of a catalyst. The additional hydrogen permits a high yield of the liquid product. In brief, the sequence is this: The coal is pulverized and then mixed into a paste with some catalyst such as iron oxide and heavy oil obtained from a previous run. This

mixture is pumped into a preheater and hydrogen is added. When the whole mass becomes fluid as water, it is moved into massive cylindrical converters, where in an hour's time, under continued intense heat and pressure, the hydrogen and coal react to form oil and gasoline. Then follow the steps to separate the heavy and light oils, gases and by-products.

One of the great advantages of this process is its versatility. Merely by varying operating conditions, all manner of different heavy or light fuels can be produced, separately or simultaneously. Thus, production emphasis can be altered to meet sudden shortages or needs. This flexible process yields scarce and essential phenols and other chemicals urgently needed for military uses.

Meanwhile, another hydrogenation plant—this one with the production of chemicals other than gasoline as the primary objective—has been established by a private company in West Virginia. Eventually, hydrogenation could conceivably supplant carbonization as the foremost source of valuable coal derivatives that include explosives, sulfa drugs, plastics, nylons, and scores of other items necessary to our economy in peacetime and wartime. In carbonization, the chemicals come from vapors and tar that are distilled in ovens where the coal is baked without air to produce coke for steel. But the markets for chemicals have in some cases greatly outweighed supply, particularly with respect to benzene, toluene, and other substances that have been in heavy demand since the beginning of the battle for Korea. Hence there is an excellent future for a chemicals-by-hydrogenation industry.

Another important engineering research project is the development of a coal-burning gas turbine locomotive, the research effort that has been undertaken to meet the challenge of the Diesel. This locomotive would to a certain extent put the principle of the jet airplane to work on the rails in a locomotive of great efficiency, economy, power, and smoothness. Nine major railroads have joined with a number of large coal producers in supporting the research and development work on this project—which they believe is one of the most important in American industry.

The coal-burning gas turbine locomotive would be, for the first time, a coal-fired power plant that requires no water, either for steam or for cooling. It would be simple and compact, suiting the rigid space limitations of the railroad locomotive. It would need little lubrication and would operate smokelessly. Since super-heated air acting on turbine blades is the driving force, its power would be rotating rather than reciprocating, and thus would be smooth and could be smoothly applied. But, of most importance, the engine would be more economical than the Diesel, estimated to save an average of $50,000 per locomotive in fuel costs annually.

THE coal industry and allied industries are conducting numerous other engineering research projects directed at coal utilization: smokeless furnaces for home heating; electric furnaces for steel-making; crop driers for the farm; and more derivatives of coal chemicals. The latter category has almost infinite possibilities, and the day may not be too far away when many ersatz foods will be produced from the ingredients contained in the precious mineral that little more than a century ago was looked upon only as a source of heat.

There are more—many more—developments to be undertaken by members of the engineering profession with respect to coal. I have pointed out how America's mechanized mining system guarantees adequate fuel supplies regardless of how heavy the demand may ultimately become. I might have mentioned a specific instance in the industry's program to increase mining efficiency still further. In a number of mines there are already in use what is termed "continuous mining machines." It moves up to the seams on wheels or on tank-like treads, cuts the coal from the solid seam, and simultaneously conveys it up over its back to the waiting shuttle car or conveyor belt.

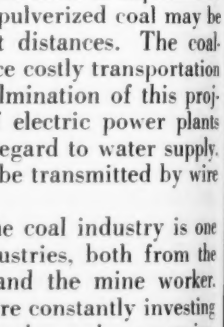
Theoretically, the flow of coal could be continuous. But we are not yet prepared to handle the rate of flow that could be produced by these new robots, and the entire underground transportation process—with emphasis on the "shuttle run" between the working face and main haulageway—will have to be speeded up and synchronized to make full use of this new machine. There is also the problem of supporting the mine roof fast enough to keep pace with the rapid advance of the machine.

Sponsors of the continuous mining machines—of which there are eight or ten differing models—claim that the contrivances can cut and load up to two tons of coal a minute with a crew of four to seven men. They contend that productivity levels could be raised to 100 tons per man-day, or about 14 times today's average level. It is certain that when attendant engineering problems are solved, today's outstanding productivity records will fall far back on the road of progress. Thus in creating a new mechanical monster that can revolutionize the world's foremost mining system, the engineer has concomitantly produced other technical complications which he alone can solve.

TRANSPORTATION from mine to market also offers new vistas for the engineering profession. Railroads have satisfactorily served the coal industry through the years, but freight rates have been rising to such an extent that the coal man must think about less expensive methods of transportation if he expects to continue to serve his customers at reasonable prices. One producer is experimenting with a pipeline through which pulverized coal may be pumped over both long and short distances. The coal-burning gas turbine may also reduce costly transportation requirements, for the successful culmination of this project could permit the setting up of electric power plants at sources of coal supply without regard to water supply. In effect, coal's energy would then be transmitted by wire from the mine mouth.

In conclusion, let me say that the coal industry is one of the most progressive of all industries, both from the standpoint of the mine operator and the mine worker. The producers of bituminous coal are constantly investing in research and development, and mine union organizations welcome new machines and new techniques that tend to increase productivity. Under such conditions, and with the increasing dependence that the nation will place upon bituminous coal in the coming years, it is obvious why the young graduate in mining engineering who joins the coal industry can look to the future with confidence and enthusiasm.—***End.***

The Author . . .



Mr. Kelley

Augustine B. Kelley, a coal operator of many years experience, has been a Member of Congress from the State of Pennsylvania since 1940. He is a member of the American Institute of Mining and Metallurgical Engineers and is generally recognized as an expert on all phases of the coal industry.

Mr. Kelley is also an expert on manpower problems. On two different occasions, the United States House of Representatives designated him as its official representative to conventions of the International Labor Organization. He is a native of Greensburg, Pennsylvania.

Can the union movement sweep the engineering profession as it has the auto workers, the steel workers, the miners?

Professional Unity–Unionism, Unification and Ruinism

By Professor D. H. Pletta, P. E.,
Vice President, Virginia SPE, and Member, NSPE

Ever since the industrial revolution, engineers have been busy eliminating the slave labor, bettering the public health, and supplying the ever-increasing material needs of their fellowmen. They have gone about this work so quietly, however, that man takes these great gifts for granted and heaps financial rewards on merchants and honors on politicians instead.

Man's complacence stems from his doubt of the ultimate effect of this engineering activity. He realizes that machines ease his burden but they also replace him, and he worries about his security. If he remembered that technology continually creates more and less arduous jobs, and reduces the unit cost of his material needs, he might be grateful for mechanization and for our system of free enterprise which made all this possible.

In his public relations, the engineer has an obligation not only to serve mankind but to educate his fellowman in the economic aspects of technology, and to take an active part in drafting progressive sound legislation. But since the engineer must work on integrated teams of specialists, his contacts with the public are limited. He can overcome the effects of this isolation only by united effort.

Some may question the need of professional unity but these engineers need but contemplate the united effort that will be required to convince all mankind of the unlimited benefits of technology when properly administered. Unity will also be needed in more mundane professional activities in the future just as it was in the past.

Group action was required to prevent the submergence of engineers into general labor unions when the Wagner Labor Act was replaced several years ago. Unified effort was needed to establish our engineering registration laws to safeguard public health, safety and property. Concerted action is being used today to alleviate the critical shortage of engineers. Only through unity can such changes be effected.

The title of this paper indicates that there are, apparently, three different paths being followed at the present time tending to unify the profession, and these can be classified as Unification, Unionism and what I shall call Ruinism. The first of these is a conscious effort stemming from the activities of eminent engineers to unify the engineering profession, but unfortunately it involves some rather divergent views. The second of these, Unionism, is undoubtedly the outgrowth of poor employee-management relations and a lack of foresight to provide the stimulating and creative atmosphere in which the engineer can work best. The third category, Ruinism, deals with the socialization of the engineering profession and of the ever increasing number of engineers employed by Federal, State or Municipal agencies.

It must be apparent that any one of the three attempts, if successful, will in the end unify our profession. All roads may lead to Rome but many who travel these paths never get there. Those who do may arrive at different times and discover the Romes of different ages. It is questionable, therefore, whether the final unity achieved by the three efforts would be the same. Some might accomplish little more than financial gain and a false security. But only true unity has any chance at all of developing the truly creative atmosphere required for technical progress, or of even maintaining our present system of free enterprise under which the engineering profession has developed so rapidly, and under which freedom has flourished so abundantly.

Unification

About 1800, when the engineering profession was first severing itself from its military origin, there was neither unity nor even much of a profession. In 1819, what is now Norwich University, established the first academic program in civil engineering, and thus classified it as a learned profession. Rensselaer followed in 1828. The growth since then has been phenomenal for 192 schools of engineering now exist in the United States.

This growth was accompanied by a gradual separation

How Can the Engineering Profession Best Be Unified? Are Some Types of Unity Worse Than No Unity At All?

of subject matter into special engineering branches and by an accelerating segregation of the fields of practice. As a result, the engineering profession failed to build up an esprit de corps and of recent years has found its aims and even its very nature grossly misunderstood by the public.

One of the first attempts at unifying the profession occurred in 1915 when the American Association of Engineers (AAE) was organized to stimulate public services of the profession and to promote its social and economic welfare. Its initial membership was limited to legally qualified, professional engineers, but this standard was later relaxed and it now numbers about 5,000 members. In 1934 a second attempt was made to unify the profession when the National Society of Professional Engineers (NSPE) was formed. Its membership, restricted to registered engineers only, has grown to over 26,000 since then. Of approximately 70 technical engineering societies, only three, the ASCE, ASME and AIEE, are slightly larger. Yet even with its large size, the NSPE can claim as members only 17.5% of the 150,000 registered engineers or 7.5% of 350,000 of all engineers practicing. A comparison of the relative unity in medicine, law and engineering can be obtained from Table I. This data indicates that engineering has lagged behind its sister professions by about 50 years in all important matters of unification.

In 1932, the Engineers Council for Professional Development (ECPD) was organized by the four founder societies, the American Institute of Chemical Engineers, the American Society for Engineering Education, the National Council of State Boards of Engineering Examiners and the Engineering Institute of Canada. Its aim at professional unity were directed primarily toward academic and professional training and the ethical principles of our profession. Perhaps its most noteworthy achievement has been the accrediting of 148 engineering schools. Yet after 17 years of effort on the part of ECPD, 44 schools are still operating in the U. S. and are not accredited. One wonders what graduates of these institutions must think when they find their academic training not recognized by some State Engineering Examining Boards. These founder societies were organized primarily to dessiminate technical knowledge, and yet felt the need of professional unity to better the public service and further the interests of engineers.

THEN, in 1941, the founder technical societies took another step to unify the profession when they formed the Engineers Joint Council (EJC) to coordinate the activities of these constituent societies in matters of mutual interest. This body was composed of representatives appointed by the several societies, but their memberships had only a remote opportunity in this selection. Later, in 1949, the EJC invited 16 major engineering societies to form an Exploratory Group to consider plans for a unity organization. By September 1951, this group had considered the four following plans:

Plan A would be a federation of engineering societies governed by representatives from the participating societies in proportion to their membership, and financed by allocations from individual society budgets. No provision is made for individual membership, individual representation or direct payment of dues.

Plan B would include more engineering societies, provide for individual membership, be governed by representatives from societies in proportion to their size, and be financed partly by society allocations and partly by dues.

Plan C contemplates the merger of EJC with NSPE, which would relax its membership standards to include individual members of high standing from other societies. It would provide a governing body composed of representatives of state societies and of a number of national societies and be financed by individual dues.

Plan D proposes the adoption of NSPE as the unity organization with expansion of its membership but no relaxation of its standards. It would be governed by representatives from the affiliated state societies and would be financed entirely by dues of individual members.

This Exploratory Group recommended Plan A in its meeting last December but the choice was not unanimous, for NSPE dissented. It contends that Plan A will not truly represent individual members in a democratic way since members of the several societies will have little direct voice in selection of the delegates; that no provision is made for binding decisions; that the matter of financing has not yet been fully resolved, and that members of the 16 constituent societies have not yet been polled as to their wishes. The Boards of four societies with a membership of 49,000 favor Plan A, four with a membership of 103,000 favor Plan B, C or D, four with a membership of 44,000 have no preference and the rest representing 20,000 engineers have not yet reported.

A grass roots expression of this federation took place in Kansas recently where several societies met to consider the four plans. One society favored Plan A 100% before the meeting, but after a thorough discussion, all of those present favored Plan D. Apparently many engineers are not too well informed about the implications in the four plans today.

Table I

	Medicine	*Dentistry*	*Law*	*Engineering*
First Licensing Law	1760	1841	1890	1907
First College Course	1765 (U. Pa.)	1840 (Balt.)	1779 (W & M)	1819 (Norwich)
2-4 Plan Approved by Professional Society	1918	1937	1921	?
Founding of Professional Society	1847 (AMA)	1859 (ADA)	1878 (ABA)	1934 (NSPE)
National Board of Examiners	1892	1883	1931	1920
Professional Society Accrediting of Curriculum	1907	1909	1921	1936
Licensed Individuals	165,000	77,000	180,000	150,000
Practicing Individuals	165,000	77,000	180,000	350,000
Membership in Professional Societies*	138,000	71,000	42,000	26,000

***Membership restricted to legally qualified individuals.**

Data in the Table I represents the best available information. Individual entries give statistical data for the 1940-50 decade, but do not necessarily coincide for any one year. The entries should, therefore, be regarded as being only approximate.

THE NSPE favors cooperating with the EJC but will not relax its high standards of membership. It is interesting to note that if NSPE continues to grow in the future as it has in the past, it will represent the profession in its own right and in a very democratic way.

Regardless of our prejudices, it must be admitted that all of the eminent leaders engaged in this unity movement are reaching for the same high goal. Out of all this effort will come an even greater devotion of the engineer to the service of mankind and public recognition of engineering's merited professional stature.

Unionism

THIS movement to unify the profession has not been a dream of professional societies alone. In the early 1940's, company unions of engineers were born on the West Coast. They were almost engulfed by the gigantic labor unions and saved as independent entities only by the Taft-Hartley Law. This law guarantees groups of professional industrial workers the right to form their own union, to join with the larger labor unions, or to remain outside of the influence of either. The individual has no choice but to abide by the will of the majority of his fellow professionals in any company election. The number of these unions has increased slowly and representatives of these organizations met in Chicago last February to explore the formation of an association.

It is somewhat disheartening to think that engineering-management communications became so strained in the past as to necessitate the formation of these unions. Management, faced with the problem of always remaining solvent despite ever increasing competition and taxation, has not always had time to consider the impact of its personnel relations with its professional employees. But our own ranks have harbored those with real or fancied wrongs, dissenters and even incompetents. Neither side has been faultless.

Nevertheless, it is well recognized that engineering practice is creative and can flourish best when least restricted. This is especially true in research and development on which industry must depend for its new products and its very survival.

Whether the unions have been conscious of their efforts to unify engineering or whether they can achieve that goal remains to be seen. If their aims are limited solely to financial gain and security, if they resort to strikes when collective bargaining efforts become stalemated, and if they do not strive constantly for greater service to the public at all times, they can hardly hope to gain favor in the public esteem nor to survive as independent unions.

Ruinism

PARALLELING the efforts of the engineering societies and the unions to unify the profession is a more sinister force, that of socialism. These remarks are not intended as being in any way derogatory toward the splendid technical work being performed by engineers working for Federal, State or Municipal agencies. But the number so engaged directly is increasing at an alarming rate and varies today from 6.8% of all chemical engineers to 50.8% of all civil engineers. In addition many more engineers must be devoting their full energies on governmental contracts with private industries and consulting firms.

Perhaps this upsurge is but a passing crisis created out of the cold war. I am more inclined to think, however, that it is a continuing drift toward complete socialism that started with the birth of our nation. When the Liberty Bell first tolled out that announcement to a startled world of our determination to be independent, there were few public schools, public libraries, public roads, public bridges or public water supply systems. Now we firmly believe in and accept these social institutions. Today the process is engulfing our city transportation systems and electrical utilities. In England, railways, the steel and coal industries and the whole medical profession have already been submerged as well.

More engineers are working for the government than ever before. Above: A government power plant at Heart Mountain, Wyoming.

If this socialism continues unchecked, it will ultimately encompass all of industry, all of the professions and all of civilization as well. Then we will all have achieved unity, but for what. Gone will be the system of free enterprise, which in 150 years enabled 7 per cent of the world's population living on 5 per cent of the land area, to produce 50 per cent and yet consume only 14 per cent of the world's goods. Gone will be the initiative for truly creative professional work, or any need of ethical practice. Gone too will be the individual dignity of man. Aye, we will have unity, but at what a price.

Conclusion

And so we stand today at a cross road, with signs marked Unity pointing to the left, right and ahead. Perhaps, all lead to the same place. It is more likely that they do not. Let us hope that we shall choose between them today as our consciences dictate, not as others tell us. To be led blindly now may be not only professionally disastrous, but nationally catastrophic and humanly calamitous as well.—**End.**

About the Author . . .

Dan H. Pletta, P. E., is Professor and Head of Applied Mechanics at Virginia Polytechnic Institute. He received his B.S. in C.E. from Illinois in 1927, holds an M.S. from Wisconsin and a C.E. from Illinois, and took additional graduate work at VPI and Columbia.

Prof. Pletta is the author of numerous papers published in various technical society journals and a textbook, *Engineering Statics and Dynamics*, was published by the Ronald Press Company last year.

His design and construction experience covers employment with several large firms. He has also been engaged in teaching and research at Wisconsin, South Dakota, and VPI. He is a Vice President of the Virginia SPE.

UNITY DISCUSSIONS RESULT IN VARIED REACTIONS

NSPE's Position Based On Beliefs in Fundamental Requirements for Unity Organization

ONE of the items of vital concern to the engineering profession—and certainly to members of NSPE—has been the considerations of the past two years by representatives of 16 of the major engineering societies on the subject of unity within the engineering profession. At the recent Annual Meeting in Tulsa, Alex Van Praag, Jr., NSPE's representative to this Exploratory Group, outlined the current status of these considerations.

In December 1951, the Exploratory Group presented a Majority Report, (see AMERICAN ENGINEER, March, 1952) recommending an expansion of the Engineers' Joint Council to include more of the engineering societies. This report had several serious deficiencies in the opinion of NSPE, and, as a result, Mr. Van Praag presented a Minority Report outlining the NSPE position. In this Minority Report, the NSPE pointed out that the Majority Report failed in several respects to provide elements of a unity organization which experience over the years had shown to be essential if the resulting organization was to be effective on behalf of engineers.

One of the principal deficiencies was in the matter of providing for individual membership. NSPE has long believed that the policies and programs of the unity organization should be determined by the individual members of the profession. This, they believe, can best be accomplished by having individual dues-paying members, with an organizational pattern such that their opinions may be expressed on matters of concern in the engineering profession.

In order that the organization may be effective, NSPE feels it essential that there be an integrated and coordinated program at the local and state levels, as well as the National level. NSPE pointed out in its Minority Report that there was no provision for such organization in the proposed expanded EJC program. It further pointed out that unless effective grass roots implementation of programs in the social, professional, economic, and ethical fields was possible, the unity organization would not be effective.

Another point made by the NSPE in its Minority Report pertained to the failure on the part of the Majority Report to provide for any authority for effective action. The Majority Report provides: "It is recommended that the constituent societies recognize the unity organization as the majority organ for cooperative work between them. However, this does not require the constituent societies to give up any of their present activities or their cooperation through other channels, except as and when they find this to be desirable." *This means that any participating organization in the plan proposed in the Majority Report could, as they saw fit, participate or not in any program.*

A further difficulty was also envisioned in the fact that the Majority Report made no provision for the financing of the activities of the unity organization. Experience of NSPE and other organizations has shown that effective action on these important non-technical matters requires adequate financing which, in turn, must be provided either from the budgets of the participating societies or by direct individual dues. Neither is provided in the Majority Report.

As a result of these considerations, and as reported in last month's issue of the AMERICAN ENGINEER, the Board voted to advise the Secretary of the Engineers' Joint Council that NSPE did not at this time believe it wise to accept an invitation to join EJC, were such an invitation to be extended.

NSPE's letter in reply to the original inquiry on this subject summarizes the basic position taken by the Board. It is, in part, as follows:

"In the event an invitation were extended to NSPE to join the EJC, the Board of Directors expressed the opinion that NSPE could not accept at this time because of several fundamental weaknesses in the proposed expanded EJC, among which are:

"1. The failure to determine the relationship between NSPE and EJC on programs in the social, economic, ethical, and governmental fields;

"2. The failure to provide for individual membership;

"3. The failure to provide authority for action;

"4. The failure to develop the financial responsibilities and corresponding financial commitments for participating societies; and

"5. The failure to provide for coordinated action on the part of the engineering profession at the state and local levels.

"However, the Board of Directors further directed that it be made clear this action should not be construed as an unwillingness on the part of NSPE to discuss the unity matter further."

Mr. Van Praag told the Annual Meeting that in a recent reporting the following action had been taken by the various Societies:

Eight Societies indicated general approval of the Majority Report of the Exploratory Committee. These Societies are:

The American Association of Engineers;
The American Institute of Chemical Engineers;
The American Society of Civil Engineers;
The American Society of Heating and Ventilating Engineers;
The American Society of Mechanical Engineers;
The American Waterworks Association;
Institute of Radio Engineers;
The Society of Naval Architects and Marine Engineers.

At a later date, the American Society for Engineering Education also indicated their approval of the report. These Societies represent a membership of 115,419.

Some of the above acceptances approved the report only in principle. Others indicated their "willingness to entertain an invitation from EJC."

Three Societies have indicated disapproval of the report. They are:

The American Institute of Electrical Engineers
The American Institute of Mining and Metallurgical Engineers
The National Society of Professional Engineers.

Each has indicated that its principal reason for disapproval is a belief that the proposed organization, is not one that will insure lasting unity. These three organizations represent a total membership of 83,340.

In addition, the Illuminating Engineering Society has withheld accept-

ance, and represents a membership of 7,166.

Two Societies have not yet responded. They are the American Society of Refrigerating Engineers, and the Institute of Aeronautical Sciences. These represent a membership of 9,099. The Society of Automotive Engineers participated in early discussions but indicated the scope of activities contemplated by the unity organization was outside the field of their activities and withdrew from further participation.

The discussion at Tulsa brought forth the observation that until an organizational pattern acceptable to all major Societies was developed, it would be wiser for the interested organizations to continue discussions to a more definite conclusion on the controversial items. A willingness to continue these discussions, and an intense interest in developing a workable unity organization, was expressed in NSPE's comments to the EJC.

News Briefs

(Continued from page 6)

The appointment of Mr. Harry Radcliffe as West Virginia Road Commissioner has been announced by Governor Okey L. Patteson. Radcliffe succeeds Ray Cavendish who resigned to become Executive Director of the West Virginia Turnpike Commission.

The new commissioner is a native of West Virginia and received his education in West Virginia and Indiana schools. He is a Registered Professional Engineer, member of the West Virginia Society of Professional Engineers, the NSPE, the American Military Engineers as well as national highway associations.

Among the first projects the new commissioner will have to lead is the new 88-mile toll expressway between Charleston and Princeton at an estimated cost of $96 million.

* * *

The Army Corps of Engineers has marked its 177th anniversary, latest milestone in a history dating from June 16, 1776, when the Continental Congress created the post of Chief of Engineers, with two assistants.

Long known for its military achievements, the Corps also has a long tradition of civil works achievements, dealing mainly with inland waterways, flood control, and water conservation. These latter activities were expanded by Congress following World War II.

Full Text of Salary Stabilization Regulation

THE July issue of the AMERICAN ENGINEER contained a special report on Congressional action exempting professional engineers employed in a professional capacity from further wage and salary controls. Reproduced below is the official regulation of the Salary Stabilization Board to implement this Congressional directive.

This Interpretation defines the scope of paragraph (ii) of Section 402 (e) of the Defense Production Act of 1950 [¶ 2211], as amended by the Defense Production Act Amendments of 1952, with regard to the exclusion from stabilization of the salaries and other compensation of professional engineers employed in a professional capacity.

The statute, as amended, provides that the authority conferred by Title IV, relating to salary stabilization, shall not be exercised with respect to ". . . wages, salaries and other compensation paid to professional engineers employed in a professional capacity, . . ."

1. Definition of "professional engineer."—(a) A professional engineer is a person who, by reason of his special knowledge of the mathematical and physical sciences and the principles and methods of engineering analysis and design, acquired by professional education and practical experience, is qualified to apply such special knowledge for the purpose of rendering professional services or accomplishing creative work, such as consultation, investigation, evaluation, planning, design, or supervision of construction for the purpose of assuring compliance with specifications and design in connection with structures, machines, processes, works or projects.

(b) A person is qualified as a professional engineer by reason of his professional education, if he holds a professional engineering degree from a college, university or institute of technology, authorized under the laws of the jurisdiction in which it is located to grant academic degrees in professional engineering.

Northwest Engineers' Centennial — August 9. Multnomah Hotel, Portland, Oregon.

West Virginia Society of Professional Engineers annual meeting. August 21, 22, 23. The Greenbrier, White Sulphur Springs.

Convocation of the Centennial of Engineering—September 3-13. Hotel Sherman, Chicago, Illinois. **NSPE Meeting**—September 5.

National Council of State Boards of Engineering Examiners—Annual Meeting, September 4, 5, 6. Antlers Hotel, Colorado Springs, Colorado.

(c) A person licensed or registered to practice as a professional engineer in any state, territory, or possession of the United States or in the District of Columbia is qualified as a professional engineer.

2. Persons who are not "professional engineers."—(a) Persons engaged in carrying on routine mechanical activities, or persons employed as technicians or artisans (no matter how highly skilled), advisers on sales promotion, business methods and operations or in similar capacities, are not considered professional engineers. Consequently, persons whose occupations are designated as that of "engineer," such as stationary engineers, maintenance engineers, sales engineers or management or administrative engineers, are not professional engineers.

(b) Physicists, chemists, mathematicians, and other persons professionally employed in scientific fields, even though their scientific field or particular work activity may be related closely to professional engineering, are not professional engineers.

(c) Persons employed as engineering assistants, engineering aides, junior engineers or other "engineering" personnel who may work in more or less close association with professional engineers, but who are not qualified to do the work of professional engineers, are not professional engineers.

3. "Employed in a professional capacity."—(a) The statutory exclusion from salary stabilization extends to a professional engineer only if he is employed in a professional capacity. A person is so employed if he performs engineering work of a professional character within the meaning of the regulations, Part 541, issued by the Administrator of the Wage and Hour and Public Contracts Division pursuant to Section 13 (a) (1) of the Fair Labor Standards Act of 1938, as amended (29 CFR, 1950 Supp.).

(b) A person, qualified as a professional engineer, may actually be employed in a position which does not involve the duties or responsibilities of a professional engineer. Such a person is not regarded as being employed in a professional capacity, even though he may be employed by a professional engineer or a firm of professional engineers.

For example, a qualified professional engineer may be employed in an executive rather than a professional capacity (such as vice president in charge of sales of a firm of machinery distributors). Similarly, a professional engineer whose primary duty is that of an administrative employee (such as employment manager in charge of recruiting and placement of professional personnel) or that of an outside salesman (such as soliciting of contracts from governmental agencies for industrial concerns) is not employed in a professional capacity. A person qualified to be a professional engineer, who has a combination of professional and nonprofessional duties and responsibilities, is employed in a professional capacity only if his primary duty, as such term is used in the definition of a bona fide professional capacity contained in the regulations, Part 541 (issued by the Administrator of the Wage and Hour and Public Contracts Divisions) is that of a professional engineer.

Professional POSTSCRIPTS

This is your department. Your contributions to it are solicited. We want your views on subjects that affect the engineering profession directly or indirectly. Please keep your contributions short, and remember that editing may be necessary to conserve space. Your name may be omitted if you desire. — *The Editor.*

Out of the mailbag comes a clipping from a recent issue of *Refrigerating Engineering*, and although some of the thoughts are not particularly new, the writer from that magazine puts them very succinctly. Here they are.

On page 955 of this issue of REFRIGERATING ENGINEERING Carey H. Brown, chairman, Engineering Manpower Commission of the Engineers Joint Council presents a vivid and alarming picture of the present shortage of engineers available to industry and the armed forces. He also shows how the shortage will become more critical as time goes on. Although the demand for engineers is increasing by leaps and bounds, the number of high school graduates who embark on an engineering college education is increasing only slightly. At a convocation held last month in Pittsburgh, Mr. Brown and other engineering leaders spoke before several hundred industrialists, educators and engineers in an effort to impress upon them the seriousness of the situation and the need to guide high school students into an engineering college curriculum.

However, we publish Mr. Brown's article with a feeling that it does not get to the core of the matter. In our opinion there is one way in which to guarantee an adequate supply of engineers and that way is to make the engineering profession so attractive that colleges and universities will be swamped by young men wanting to study engineering. The fact of the matter is that the engineering profession has not been a very attractive one in the past and many young men, even those with a talent for engineering have chosen other fields of endeavor because the prestige, security, and monetary reward were greater. And engineering is not particularly attractive today when compared with the opportunities offered doctors, lawyers, accountants, journalists, economists, interior decorators, or the fellow who owns and operates his own gas station.

First, the engineering profession, in spite of the fact that it is responsible for much of the great wealth and high standard of living in America, has never received the respect and prestige accorded law or medicine. Due to the nature of modern industry, very few engineers are self-employed. Most of them work for a wage and they are looked upon as necessary but not irreplaceable members of a company. They do not have the high professional standing of the doctor or lawyer and, therefore, do not have the prestige of their brethren in law, medicine, or pedagogy.

Secondly, the engineer's average monetary return is below other professions that require equal training, ability, and experience. Today the engineer's starting salary is high—$300 to $350 a month—but he soon reaches his peak and unless he engages in sales or becomes active in management, there is little likelihood of his earning in excess of $9,000 a year. Increases in wages to engineers have been in the lower echelons—the older experienced man has had little financial recognition of his ability.

Thirdly, the history of the engineering profession indicates considerable job insecurity. In boom times engineers have been in great demand as they are at present. In depression times engineers come a dime a dozen. The demand for teachers, journalists, doctors, and lawyers is reasonably steady in good and bad times but the engineer is either a drug on the market or he is the indispensable man.

These conditions have undoubtedly acted in the past as deterrents to young men who might have entered the engineering profession. If industry wants engineers to keep its wheels moving, then it must make engineering jobs so attractive that many more young men will follow this calling than do so at present. Industry must help to raise the prestige of the engineering profession it must offer working conditions similar to those of a research scientist where there is a large degree of independence and very little of the "boss" atmosphere. Industry must be able to guarantee reasonable job security—at least a security comparable to that of other professions—and last, but certainly not least, employers must be willing to compensate engineers to a degree that will enable the engineer to be on a par with men in other professions.

Without adequate prestige, job security, and compensation, young men are going to study professions other than engineering when they graduate from high school. The history of engineering employment is pretty bad. If industry seriously wants good engineers, it must be willing to pay the price for them.

—PP—

There is a lot of romance in engineering as every real professional knows. Many cannot put these things into words very well but one man who has is

Engineer J. B. Dannenbaum, of Houston, Texas.

And here is Engineer Dannenbaum on the "Romance of Engineering."

"In the beginning, God created the heaven and the earth, and the earth was without form, and void, and darkness was upon the face of the deep."

And God created man in his own image and gave him dominion over all the earth.

Since the beginning of time, the engineers among men have followed the examples of their Creator by taking matter without useful form and making it into things of use and benefit to man and beast. The engineer has reached out into the voids of time and space and has captured and utilized the forces of nature he has found there. He has dared the darkness of unknown and has brought light, and knowledge, to serve his fellow man.

Do you ever dream? Have you ever had a vision of some project, large or small, and seen yourself as the motivating force, the directing hand, to effect its accomplishment? Have you felt the thrill of creation when you combined a piece of wood, some cord, rubber bands, a bit of shoe leather and your dexterity with a jack knife into your first completed slingshot?

Are you inquisitive? Have you ever disassembled the family alarm clock in an effort to discover the why of its "tick"? Has your curiosity prompted you to investigate what causes combustion, how an electric current can create a light source, what makes sand, gravel and cement into concrete?

If you are a dreamer and have the imagination necessary to make your dreams come true; if you like to make things and get a thrill out of successful accomplishment; if you are inquisitive and have the drive to satisfy your curiosity; then you have the basic qualities necessary for a discovery of the romance to be found in the practice of engineering.

As an engineer you can find this romance to which I refer if you are able to discover the urge which has prompted your professional forebears to venture into the realm of the geographical and physical unknown. Regardless of your selected branch or specialty, you can find adventure, surprising incidents, thrills and satisfaction if your prime purpose in life is not that illusory thing commonly called security. Success will come from ability and accomplishment.

Romantic adventure awaits you on hydro-electric projects in Pakistan. Real challenges will meet you as you grapple with nature in the development of Saudi Arabia's oil resources. The constant search for petroleum products in our own great country offers a never-ending opportunity for the exercise of ingenuity.

Rail, auto and air transportation are fast-moving facets in our expanding industrial economy. Will your ideas bring about changes as radical as dieselization and jets have accomplished?

What new wonders will you initiate in the already fantastic field of petro-chemistry? Thrills aplenty await the successful run of the first pilot plant you will design and build.

Will you be the engineer to discover the best method of generating electric power from atomic energy? Consider the opportunities for development in radio, radar and supersonics; think about the thrill that would be yours if you solved the problem of commercial transmission of power by electronics.

Fascinating research opportunities await

you in the great laboratories of modern industrial plants, in our colleges, and in your own practice. The future is unlimited for the engineer with an imagination.

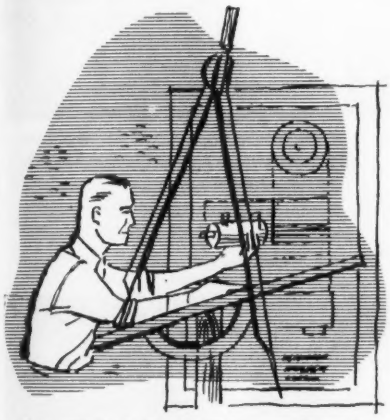
Consider the adventure and resulting thrills of managing a factory, a construction firm or a laboratory. Do not forget the worth-while and necessary type of practice required of men in our engineering colleges. They too can have the thrill of creation and accomplishment as they mould unconsolidated matter into engineering brains.

An engineering career will bring you close to nature and acquaint you with its mysteries and its grandeur. The hardships of a reconnaissance survey into the wilds of an undeveloped territory are forgotten when you face the glory of a sunrise with its promise for the new day.

You will see the beauty created by the assembly of pumps and pipes, valves and vessels, into a coordinated and pulsating producer of fuel for supersonic flight.

To you will come opportunities to compose the symphonics of line and shape which will develop as you design our suspension bridges, our skyscrapers and our space ships.

You will learn to appreciate the majesty of a Hoover Dam, an Empire State Building, a Golden Gate Bridge.



You will feel the thrill of creation when you plan a new city with its broad trafficways designed for modern rapid traffic; its parks and recreational facilities, its schools and colleges; yes, even its incinerators. What more exciting adventure would you seek than to bring adequate supplies of water from distant sources over difficult terrain to satisfy the thirst of a city and its people? Will you be the engineer to find a simple answer to the complex problem of waste disposal in a highly organized urban community? Will you find romance in service to your fellow man?

On you will fall the mantle of responsibility for the design of facilities to make possible the use of scientific discoveries for the benefit of mankind.

Of what use is the discovery of anti-biodics unless the engineer can build a plant and equipment to make possible its production by synthesis?

The nuclear scientist will depend upon you for design and construction of facilities required to produce the end products for nuclear fission and fusion and for the disposal of harmful waste by-products. This is adventure, unlimited.

The farmer, producer of food, has come to you for the development of machinery to make it possible for him to satisfy the ever-increasing demands of a growing population. On you he must depend for the facilities necessary to manufacture fertilizer to replace and supplement natural soil fertility. To you he turns for help in providing water for thirsty crops and animals.

Even our friends in the legal profession, self-sufficient as they are, must depend on us for the design of their court buildings, their jails and their penitentaries.

The application of new medical and surgical discoveries will wait on your development of housing, tools and apparatus for hospitalization and treatment. Improvements in sanitation and public health, in nutrition, physical rehabilitation, all depend upon equipment and processes developed by the engineer.

You will feel an inspiration and glory of Divine origin when you attend the dedication and consecration of a place of worship on which you were responsible for structural and mechanical design; for the very safety of the temple dedicated to the glory of God.

Will you find the romance in engineering? If you feel no thrill when you see a sunrise, or a dam; an airplane or an oil-well; a gangplow or a refinery; a light bulb or a submarine; a nylon dress or an iron lung; an automobile or a church; then perhaps you will fail to find those things that make the real practice of engineering a romantic profession.

In the very beginning, man was naked; but man alone, of all living things, had the power to reason. Only man was capable of designing a wheel or using a lever to move a weight. Who can deny the importance of our contribution; who can deny that we have literally designed and built the world of today? Who can deny the romance in engineering?

—PP—

Another newspaper clipping, this one dealing with research and invention, came to —PP— this month from

Engineer Einar W. Nilsson, of Youngstown, Ohio

Engineer Nilsson, in an accompanying letter, seconds the paragraph (in italics below), that points out that Patent Office examiners are not always as helpful as they might be. Here, then, is the edited story by Max Forester headlined "Research, Invention Are Imperiled in U.S." It's from the Youngstown (Ohio) *Vindicator*.

—PP—

Whether the rate of new scientific discoveries will be maintained and increased has become a matter of urgent necessity for the American people.

Today the role of the industrial scientist assumes gigantic proportions—for he can be a powerful force in helping the U. S. to attain its twin objectives of expanding its economy and winning the technological race with a Communist foe who enjoys a temporary supremacy in manpower.

More than a score of leading inventors and scientific researchers were asked what they thought of the prospects for this nation's success in this two-pronged endeavor.

Most believe, on the basis of the record to date, that the outlook is good. But the replies also show that researchers and inventors are threatened by many obstacles and problems — any one of which could knock everything into a cocked hat tomorrow.

Among Problems

Specifically, here are some of the problems that scientists and inventors are facing, as reported in the survey:

1. Industry, in many instances, has failed to give inventors and researchers of proven ability the corporate standing, financial support and freedom they need to forge ahead with new discoveries so vital to industrial development.

2. The individual inventor finds it increasingly difficult to obtain the necessary financial support and use of the necessary physical facilities for testing out his ideas.

3. The great emphasis on the discovery of new weapons of war in the last 10 years has had a depressing effect on scientific progress, while at the same time stimulating research in some of its phases.

Rewards to the inventor are limited by the practice in wartime of asking him to forego the benefits of exclusive licensing arrangements and royalties when he has made a patentable discovery in the course of work on government contracts.

4. Taxes have laid a heavy hand on both individual inventors and corporations in recent years, with adverse effects on corporate research budgets. Excess-profits taxes are particularly repressive since they penalize to a greater extent companies that have shown special talent for research achievement in recent periods.

Too Few Trained Men

5. There is a present shortage of trained scientists and engineers. It threatens to grow worse in the next few years, owing to an anticipated decline in the number of graduates from scientific and engineering schools, and the drafting of scientists into the armed forces and into government work.

6. While the scientific world is incredibly rich in data, it is highly compartmented. Researchers in different industrial laboratories are unable to communicate freely with one another on their problems.

A natural outgrowth of our economic system under which secrets are property rights of the particular organization concerned until it chooses to throw them into the open, this nevertheless presents difficulties for the scientist. In addition, there is the secrecy imposed upon much atomic energy research.

7. "Pure" research, as opposed to "applied" research, is lagging. On this point scientists and inventors are emphatic.

The glittering results of the American industry's talent for utilizing research in the production of new products and devices —from the antibiotics to the atom bomb— tend to obscure the fact that we have drawn heavily on fundamental research carried out in other countries, particularly in Europe.

Cites Socialist Drift

Clarence Birdseye, pioneering developer of frozen foods and an independent inventor and consultant to General Foods, believes that during the last score of years "our government-inspired drift toward socialism and security-workship" has robbed the inventor of such incentives as the hope of large profit and "sapped the chance-taking spirit which is the soul of invention."

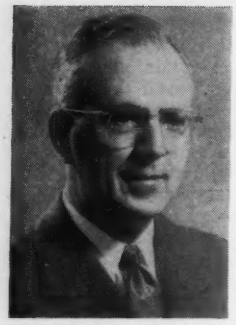
Birdseye cites the high cost of developing modern inventions to the point where a patent application can be filed, and the expense of meeting the demands of Patent Office examiners.

"I know of one relatively simple new process," he states, "which will probably require about 150 laboratory tests, costing approximately $190 each, before the examiner will be satisfied."

But of even greater difficulty to the inventor, he says, is the frequently hostile attitude of Patent Office examiners "who have so absorbed the collectivist ideology now rampant in Washington" that they are op-

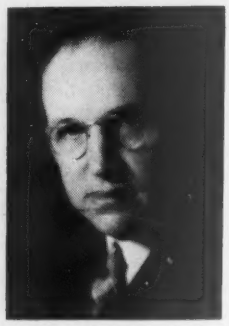
(Continued on page 30)

National Officers, 1952-53



C. T. Shoch, V.P.
Northeast Region

C. Y. Thomas, V.P.
North Central Region



E. W. Seeger, V.P.
Central Region

N. W. Dougherty, V.P.
Southeast Region

T. Carr Forrest, Jr.,
V.P. Southwest Region

W. D. Williams, V.P.
Western Region

Russell B. Allen
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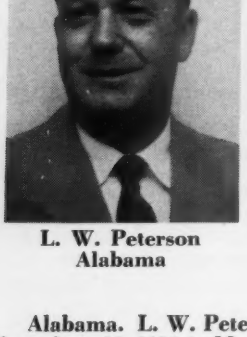
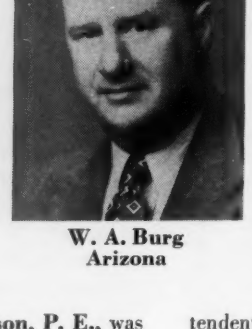
Paul H. Robbins
Executive Director

Members of the Board of Directors, 1952-53

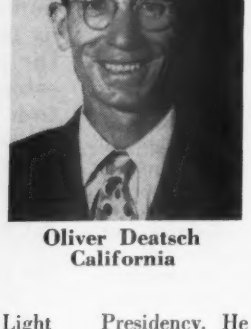


L. W. Peterson
Alabama

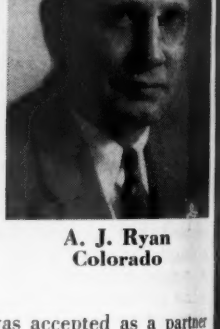


W. A. Burg
Arizona

R. J. Rhinehart
Arkansas



Oliver Deatsch
California



A. J. Ryan
Colorado

Alabama. L. W. Peterson, P. E., was born June 18, 1916 in Munising, Michigan. Mr. Peterson was formerly the President of the Alabama Society of Professional Engineers. He is the District Manager of the Goodman Manufacturing Company in Birmingham and holds memberships in the Birmingham Engineer Club, American Society of Mechanical Engineers, American Society Military Engineers, and the American Society Mining and Metallurgical Engineers.

Arizona. W. A. Burg, P. E., a graduate of Missouri School of Mines and Metallurgy, received his B.S. in C.E. from that institute. Mr. Burg was born December 4, 1901 in East St. Louis, Illinois. He is presently affiliated with the Arizona Highway Department in Phoenix.

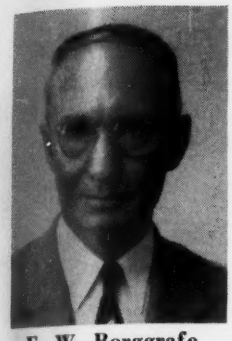
Arkansas. R. J. Rhinehart, P. E., was born August 20, 1900 in Plymouth, Indiana. A B.S. in E.E. in 1922 and an E.E. in 1926 were received from Purdue University. Mr. Rhinehart is Superintendent of the Arkansas Power and Light Company in Pine Bluff. From 1949-50, he served as President of the Arkansas Registration Board for Professional Engineers. In 1939 he was elected by people of Pine Bluff as "Our Leading Citizen."

California. Oliver Deatsch, P. E., was born August 19, 1909 in Modesto, California. He graduated from Modesto Junior College in 1930. In addition to duties as Deputy County Surveyor and Building Inspector, he is Assistant County Engineer and Road Commissioner. In 1948, Mr. Deatsch attended the formation meeting of the California Society of Professional Engineers, and has held several offices since then.

Colorado. A. J. Ryan, P. E., received his B.S. in C.E. in 1933 from the University of Colorado (Special Honors) and his C.E. in 1937. He was born in Denver, Colorado on August 29, 1908. In 1948, Mr. Ryan was Director of Professional Engineers of Colorado and from 1949-50, he held the Presidency. He was accepted as a partner by Herbert S. Crocker in his consulting engineering practice on May 1, 1941. After the death of Mr. Crocker and the withdrawal of his son, Forrest S. Crocker from the firm on March 1, 1949 Mr. Ryan became successor to the firm and completed its projects.

Connecticut. E. W. Borggrafe, P. E., was born April 25, 1886 in Aldenburg, Germany. He received his E.E. from Engineering College in Zwickau, Germany. From 1935-39, he was Secretary of the Stamford Chapter, from 1940-41, was President of the Stamford Chapter, and has held several offices since then. At present, Mr. Borggrafe is Chief Engineer of the Electric Specialty Company, Stamford, Connecticut.

Delaware. W. W. McWilliams, P. E., was born in Dillsburg, Pennsylvania on October 1, 1899. From 1947 to 1950 he was Chief Engineer of the Delaware State Highway Department and is presently Director of Construction, Delaware Memorial Bridge



E. W. Borggrafe, Connecticut

W. A. McWilliams, Delaware

J. H. Powers, District of Columbia

R. J. Boston, Georgia

Orbie Bostick, Georgia

O. C. Mayer, Idaho

W. A. Oliver, Illinois

George DeMent, Illinois

L. E. Easley, Indiana

W. G. Johnson, Kansas

for the Crossing Division, Delaware State Highway Department. Mr. McWilliams is a member of the American Society of Civil Engineers and a Colonel, U. S. Army Reserve.

District of Columbia. J. H. Powers, P. E., born April 15, 1902 in Rome, New York, graduated from the Clarkson College of Technology with the degree of B.S. in C.E. in 1926. He was first Vice President of the D.C.S.P.E. from 1950-51 and President from 1951-52. Mr. Powers is employed by the U. S. Bureau of Public Roads as Bridge Engineer.

Georgia. R. J. Boston, P. E., received his B.S. in C.E. from Georgia Institute of Technology. He received his M.S. in Sanitary Engineering from Harvard University and studied law at the Emory University Lamar School of Law. In 1933, he gained employment with the Georgia Department of Public Health and now holds the position of Chief Sanitary Engineer and Director of Environmental Health Services. Mr. Boston was the first President of the Atlanta Chapter. He is a special consultant to the U. S. Public Health Service and is a Senior Sanitary Engineer in the Inactive Reserve of USPHS.

Orbie Bostick, P. E., born October 11, 1909 in Alabama, received his B.S. in C.E. in 1932 from Auburn. In 1937, he received his M.S. in C.E. Mr. Bostick was employed as a junior engineer by the Atlanta Gas Light Company in July, 1937 and has remained with this company except for the 4 year period with the army. He is now Chief Industrial Engineer.

Idaho. O. C. Mayer, P. E., born September 1, 1904 in Mora, Minnesota received his B.S. in E.E. from the University of Idaho. A past vice-president of the Western Region of the N.S.P.E., he has held several offices since then. Mr. Mayer is a member of the Idaho State Board of Engineering Examiners, Chamber of Commerce, Elks, and other organizations. He is presently employed as Director of Industrial Development in charge of Industrial Engineering Work by the Idaho Power Company, Boise, Idaho.

Illinois. W. A. Oliver, P. E., Professor of Civil Engineering, University of Illinois, Urbana, was born January 10, 1898 in Thedford, Ontario. He received his B.S.E. in C.E. in 1922 from the University of Michigan, his M.S. in 1928 from the University of Illinois and his C.E. in 1932. He is the Editor of the *Illinois Engineer* and a member of the A.S.C.E., A.R.E.A., A.S.E.E., and several other organizations.

George DeMent, P. E., was born in Chicago, Illinois, in 1904. He was educated at the University of Illinois. From 1927 to 1939 he worked on the construction of an Intercepting Sewer System and Sewage Treatment Works of the Sanitary District of Chicago. Since 1939 he has been associated with the City of Chicago building subways and superhighways. He is now Assistant Chief Engineer of the Department of Subways and Superhighways for the City of Chicago.

Indiana. L. E. Easley, P. E., was born October 8, 1908 at Jerseyville, Illinois. He was State Director from 1947-48, Vice President in 1949 and 1950 and President, in 1951. Mr. Easley is Supervisor of Structural and Mechanical Engineering, Plant Engineers Office, Allison Division of General Motors Corporation, Indianapolis, Indiana. Mr. Easley is in "Who's Who in the Midwest," is a member of the Building Congress of Indiana, Mason, and the Indiana Engineering Council.

Kansas. W. G. Johnson, P. E., born July 14, 1899 in Salem, Nebraska, gained his education at Nebraska State Teachers College in Peru, Nebraska and Colorado School of Mines, Golden, Colorado. From 1928 to present, Mr. Johnson has been employed by the State Highway Commission of Kansas. Since 1945, he has been Engineer of Secondary Roads. He has held several offices on the State and National level.

Maryland. O. W. Turpin, P. E., was born November 15, 1900 in Washington, D. C. He is a graduate of Baltimore Polytechnic Institute and received his engineering education from Johns Hopkins University in Baltimore. Mr. Turpin is a past president of the M.S.P.E. He is a member of the A.S.C.E., A.W.W.A., and several other organizations. He is a partner in the firm of Turpin, Wachter & Associates, in Baltimore.

Massachusetts. E. L. Blair, P. E., born February 9, 1896 in Waukegan, Illinois is a graduate of Lowell Institute. He is a member of the A.S.M.E., A.S.H.V.E., N.F.P.A. and is listed in "Who's Who in Engineering." Mr. Blair was Treasurer of the M.S.P.E. from 1947-51 and is a member of the Budget Committee, N.S.P.E. At present, Mr. Blair is Chief Building Service Engineer for Stone & Webster Engineering Corporation, Boston.

E. R. Gardner, P. E., was born in Winthrop, Massachusetts, February 21, 1908. He graduated from M.I.T. in 1930 with B.S. and M.S. degrees in Electrical Engineering. Mr. Gardner is employed by General Electric Company and for the past five years, has been carrying out new product development for the Aircraft Instrument Division. He is former Past President and Secretary of the North Shore Chapter, M.S.P.E.

Michigan. O. H. Hall, P. E., was born July 27, 1904 near Lansing, Michigan. He attended Michigan State College, School of Civil Engineering, and Lansing Business University. He is a member of the Masonic Blue Lodge and Hi-Twelve Club, Lansing Engineers Club and other organizations. Mr. Hall is employed by the Michigan Department of Conservation, starting as Engineer and through successive promotion to Engineer-in-Charge of Section of Engineering and Architecture.

A. F. Plant, P. E., was born in Buffalo, New York. He graduated from Ohio Northern University with the degree of B.S. in C.E. and did graduate work at Columbia. Mr. Plant joined The Austin Company in 1920 and is now Vice President and a member of the Board. In 1935, upon its organization, he was made President of Austin Engineers, Inc. He was President of the

O. W. Turpin, Maryland

E. L. Blair, Massachusetts

E. R. Gardner, Massachusetts

O. H. Hall, Michigan

A. F. Plant, Michigan

M. C. Peterson, Minnesota

T. S. Thompson, Minnesota

J. B. Butler, Missouri

G. H. Dyer, Missouri

E. T. Foster, Nebraska

Detroit Chapter in 1947 and has held several offices since then. Mr. Plant recently had an honorary degree of Doctor of Engineering conferred upon him by Ohio Northern University.

Minnesota. M. C. Peterson, P. E., was born December 29, 1901 in Escanaba, Michigan. He received his B.S. in C.E. from Michigan State College in 1928 and his M.S. in 1930. Mr. Peterson was President of the Northwest Chapter from 1945-47 and has held several offices since then. At present, he is Director, Division of General Sanitation, Minnesota Department of Health, University Campus, Minneapolis, Minn. He is first Vice President and Director of the Minn. Federation of Engineering Societies and a Fellow, American Public Health Association.

T. S. Thompson, P. E., was born April 18, 1902 at Anaconda, Montana. A graduate of the University of Minnesota, he received his B.S. in C.E. in 1924. He was Secretary and President of the Minnesota Society and is a member of the Minneapolis Engineers Club. Mr. Thompson is Engineer of Urban Plans and Surveys, Minnesota Department of Highways.

Missouri. J. B. Butler, P. E., is a Professor and Chairman of the Department of Civil Engineering, Missouri School of Mines. He was born May 11, 1895 in Omega, Oklahoma. Professor Butler received his B.S. in C.E. from Oklahoma A. & M. College in 1915; B.S. in Education in 1924 from the Missouri School of Mines, C.E. in 1922 and his M.S. in C.E. in 1924. He is a member of Chi Epsilon Honor C E, Phi Kappa Phi Honor Society, A.S.C.E., Engineers Club of St. Louis and several other organizations. He has been in Who's Who in Engineering since 1925 and in Who's Who in America since 1941.

G. H. Dyer, P. E., born February 10, 1905 in Ash Grove, Missouri, obtained his engineering education through private study, correspondence courses and actual experience with numerous prominent engineers. He holds membership in the A.S.C.E., Engineers' Club of Kansas City, American Water Works Association, Gate of the Temple Masonic Lodge No. 422, A.F. & A.M. (Past Master) and several other organizations. He has held several offices on the State and National level. Mr. Dyer is Manager and Chief Engineer of the Independence Division of the Missouri Water Company.

Nebraska. E. T. Foster, P. E., was born in 1904 at O'Connor, Nebraska. He received his Engineering degree at the University of Nebraska in 1928. April 20, 1946, he, with several others formed the Foster-Smetana Company as a corporation. He is a member of the A.S.C.E., Omaha Rotary Club, Pro-Tem Club and several other organizations.

New Jersey. F. P. Cooper, P. E., was born in Kentucky. He studied engineering at the College of Engineering, University of Florida for two years and after a lapse of a few years spent in the Army, he continued his studies at Pratt Institute in Brooklyn, N. Y., graduating with the Mechanical Engineering class of 1921. He has been located in the New York area with a number of industrial firms and as a consultant in private practice engaged in the design of mechanical equipment and production machinery.

W. E. Christian, P. E., was born in Trenton, New Jersey, January 27, 1898. He studied in the College of Engineering, University of Illinois from 1916-18. He supervised the paving of fourteen miles of the New Jersey Turnpike in 1951. Mr. Christian is presently associated with Hefler-Snyder Company of Plainfield, N. J. He is a member of the Lions, A.S.C.E. and is a former President of the Raritan Valley Society of Professional Engineers.

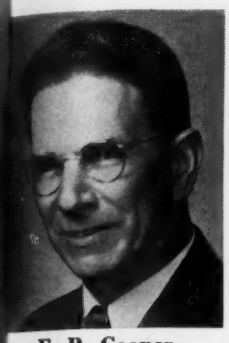
M. S. Adams, P. E., bo near North Norwich, New York in 1907, graduated from Norwich High School with a scholarship for R.P.I. where he received his degree in C.E. in 1928 with honors as Member of Tau Beta Pi and Sigma Xi. Mr. Adams is employed by the New Jersey Telephone Company as Division Engineer for South Jersey. He has been President of the Mercer County Chapter, State Trustee, Chairman of the State Legislative Committee and was Secretary-Treasurer.

L. K. McKee, P. E., was born June 3 1891 in Camey, Kansas. He completed course in engineering with the Internation Correspondence School in 1920, an exte sion course in bridge structural work Princeton University in 1925, and also extension course in highway and traf at Rutgers University in 1941. He is member of the Red Band Elks, Lions Clu Masonic Order and is a past master of th Mystic Brotherhood 21, and a life membe of Fields Council 12 of Red Bank. He ha held several offices on the State and N tional level. Mr. McKee was appointe county engineer in April 1952 by the Boar of Freeholders.

New Mexico. W. K. Wagner, P. E., born December 19, 1906 at Eddyville, N braska, received his education at the Sout Dakota School of Mines, and his B.S. i C.E. from the University of New Mexic From 1948 to the present, he has been em ployed as Engineer for Albuquerque Grave Products Company, in charge of concret mixes, aggregate production, and precas products.

New York. T. M. Linville, P. E., received his E.E. from the University o Virginia in 1926 and AMP in 1950 fro Harvard University. He was President o the Schenectady County Chapter and Vice President of the N.Y.S.S.P.E. He is a mem ber of the A.S.M.E., A.S.E.E., Fellow o A.I.E.E., Chairman of the Schenectad Section in 1942. Since 1926 he has been with the General Electric Company and is now Management Consultant, Management Consultation Services Division.

C. A. Dutton, P. E., born January 1 1899, at Oneida, New York, is a graduate of Massachusetts Institute of Technology with an S.B. in General Engineering. He was President of the Erie County Chapter from 1950-51. Mr. Dutton is now Company Director and Manager, Construction Sales



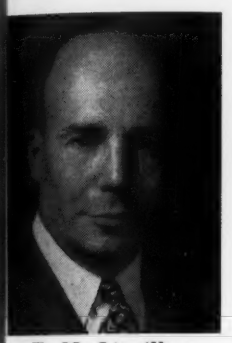
F. P. Cooper,
New Jersey

W. E. Christian,
New Jersey

M. S. Adams,
New Jersey

L. K. McKee,
New Jersey

W. K. Wagner,
New Mexico



T. M. Linville,
New York

C. A. Dutton,
New York

M. F. Wooten, Jr.,
North Carolina

George Teskey,
North Dakota

R. E. Allen,
Ohio

for the Buffalo Electric Company, Inc. He is a member of the Niagara Falls Country Club, American Legion, Buffalo Chamber of Commerce, and several other organizations. He has held several offices on the State and National levels.

North Carolina. M. F. Wooten, Jr., P. E., born April 8, 1906 at Charlotte, N. C., received his education from the University of North Carolina. In 1950, he was President of the Prof. Engrs. of N. C. and in 1951, Governor. He is a member of the Rotary Club, Charlotte Country Club, Trustee, Fishburne-Hudgins Educational Foundation, Waynesboro, Va., and holds membership in several other organizations. Mr. Wooten is a partner with Wooten & Wooten, Consulting Engineers & Architects.

North Dakota. George Teskey, P. E., born April 28, 1902 in Bothwell, Ontario, Canada, received his B.S. in C.E. Cum Laude in 1926 from the University of South Dakota. He was Secretary-Treasurer of the N.D.S.P.E. from 1945-50. He is a member of the National Rifle Association, Isaac Walton League and the Masonic Bodies. Mr. Teskey is a Right of Way Engineer for the North Dakota State Highway Department and a part time instructor in Bismarck Junior College (Geology).

Ohio. R. E. Allen, P. E., received his engineering education at Ohio State University. He received a degree of Bachelor of Industrial Engineering in 1934 and a Professional Degree in Civil Engineering in 1942. From 1945-46, he was Secretary-Treasurer of the Dayton Society of Professional Engineers, President in 1947, Trustee in 1947 of the O.S.P.E. Mr. Allen is Chief Engineer for the Univis Lens Company of Dayton.

Oklahoma. C. A. Dunn, P. E., born September 9, 1901 at Stocking, South Dakota, received degrees of B.S. in C.E. from the University of Wisconsin; C.E. in C.E. and M.S. in C.E. from Oklahoma A.&M. College; and Ph.D. in C.E. from Cornell University. He was President of the O.S.P.E. in 1948. Dr. Dunn is a member of the A.S.C.E., American Society for Engineering Education, Phi Kappa Phi, Sigma Tau and Chi Epsilon. He is now Professor of Civil Engineering and Executive Director of the Division of Engineering Research, Oklahoma Institute of Technology, Oklahoma A.&M. College.

Pennsylvania. R. A. Blackburn, P. E., born in Dayton, Ohio, on October 15, 1908, was graduated from Ohio State University with the degree of B. Met. E. from the University of Washington with the degree of M.Sc. in Metallurgy. He held Research Fellowship U. S. Bureau of Mines, Seattle, Washington from 1933-34 and was Nathaniel Wright Lord Fellow at Ohio State University from 1934-35, while working on his Ph.D. He served as President of the Pittsburgh Chapter from 1947-48 and Past President of the P.S.P.E. from 1950-51. At present, he is Assistant Chief Project Engineer of Koppers Company, Inc., in Pittsburgh.

A. H. Kidder, P. E., born December 25, 1899 at Proctor, Vermont, attended the University of Vermont for two years and received his B.S. in E.E. and Masters degree from M.I.T. He has held several offices on the State level. He is employed by the Philadelphia Electric Company as Assistant System Development Engineer in charge of all engineering having to do with the Company's system planning and engineering development projects. He has also written several articles for publication.

J. D. Carpenter, P. E., graduated from Pennsylvania State College with a B.S. in C.E. in 1914 and received his C.E. degree in 1920. Mr. Carpenter served as President of the Harrisburg Chapter, State Director, President of the State Society and National Director. He is also a member of the American Society of Civil Engineers and several other engineering organizations. Mr. Carpenter is Vice-President of Gannett, Fleming, Corddry & Carpenter, Consulting Engineers.

E. K. Nicholson, P. E., born May 23, 1899, Lakewood, Ohio; graduated from Ohio State University with a BME in 1921 and an ME in 1928. He is a member of Franklin Institute, A.S.M.E., and Phi Kappa Psi. Mr. Nicholson has held several offices on the State and National level. Presently, he is Chief Engineer of Rohm & Haas Company, Lennig Plant in Philadelphia.

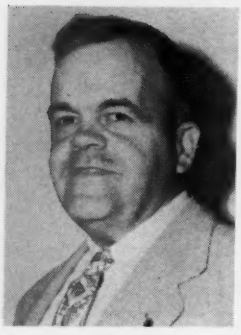
Rhode Island, Vincent DiMase, P. E., is a graduate of Brown University in the Civil Engineering Course, class of 1935. He continued his engineering education at Brown by taking advance courses. He was President of the Clavis Cultural Club from 1938-41, Secretary of the R.I.S.P.E. from 1946-48 and has held several offices since then. Mr. DiMase is Deputy Inspector of Buildings in Providence.

South Carolina. R. K. Rouse, P. E., born March 15, 1905 in Valdosta, Georgia, received his engineering education from the Georgia School of Technology. He was the first President of the S.C.S.P.E. He is a member of the American Society of Heating and Ventilating Engineers, Alpha Nu Chapter of Theta Chi Fraternity and several other organizations. He is owner of R. K. Rouse Company, sales representatives for several heating equipment manufacturers and owner of Heating Engineering Company.

Tennessee. Warner Howe, P. E., graduated from Cornell University in Civil Engineering in 1941. He worked with the U. S. Engineers, 1941-42, in civilian capacity, as engineer on the design of the Panama Canal Locks, Structural Section. From 1946-48, he worked with Gardner & Howe, Structural Engineers, Memphis, as Chief Designer and since 1949, has been a partner. Mr. Howe was President of the Memphis Chapter in 1951.

Texas. E. B. Robertson, P. E., was born June 4, 1893 in Meridian, Texas. He is President of Elgin B. Robertson, Inc., and President of Plastics Manufacturing Company. He graduated from the Univer-

C. A. Dunn,
Oklahoma



R. A. Blackburn,
Pennsylvania

A. H. Kidder,
Pennsylvania

J. D. Carpenter,
Pennsylvania

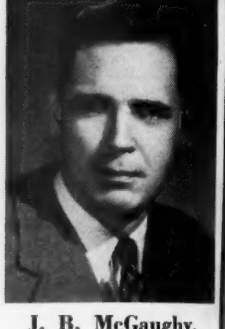
E. K. Nicholson,
Pennsylvania

Vincent DiMase,
Rhode Island

R. K. Rouse,
South Carolina

Warner Howe,
Tennessee

E. B. Robertson,
Texas



J. B. McGaughy,
Virginia

H. A. Stingle,
Washington

H. G. Kennedy,
West Virginia

G. W. Martin,
Wisconsin

A. G. Behling,
Wisconsin

sity of Texas in 1915 with the degree of E.E. Mr. Robertson is a member of Theta Xi and a Fellow, A.I.E.E.

Virginia. J. B. McGaughy, P. E., born November 5, 1914 in Norfolk, Virginia received a degree of B.S. in C.E. from Duke University in 1938. He is a Past President of the V.S.P.E. and is a member of the Engineers Club of Hampton Roads, American Concrete Institute, Rotary Club, Virginia Club and Norfolk Yacht & Country Club. Mr. McGaughy is senior partner in John B. McGaughy Associates, Consulting Engineers.

Washington. H. A. Stingle, P. E., graduated from the State College of Washington in 1932 with a B.S. in E.E. He has served as President of Associated Engineers of Spokane, President of the Spokane Chapter of the American Institute of Electrical Engineers and President of the Washington Society of Professional Engineers. Mr. Stingle is Superintendent of Buildings and Grounds for the Spokane Public Schools.

West Virginia. H. G. Kennedy, P. E., born May 19, 1903 in Coal Run, West Virginia, received the degrees of B.S. in E.M. and M.S. in E.M. from West Virginia University. He is a Past President of the W.Va.S.P.E. Mr. Kennedy is a member of the Kappa Sigma, Sigma Gamma Epsilon, A.I.M.E., Mason Shriner, Rotary and Presbyterian. At present, he is Executive Secretary of the Kanawha Coal Operators Association.

Wisconsin. George Martin, P. E., born February 7, 1905, received his B.S. in 1926 and his C.E. in 1933 from the University of Wisconsin. He is a Past President of the W.S.P.E., a Past President of Central States Sewage & Industrial Wastes Association and Director of the Federation of Sewage Works & Industrial Wastes Association. Mr. Martin is Chief Engineer and Superintendent at the Green Bay Metropolitan Sewerage District in Green Bay.

A. G. Behling, P. E., was born October 2, 1905, in Oshkosh, Wisconsin. In April, 1933, Mr. Behling set up his own office as consulting engineer, specializing in steam power plants. He was selected 'Engineer of the month' for September, 1951. He is a member of the E.S.M. He served several years on the advisory committee of the Milwaukee Department of Safety Engineering, and is presently serving a five-year term on the advisory committee to the Milwaukee County air pollution control engineer.

Nevada. R. W. Millard, P. E., born December 12, 1911 in Ely, Nevada is a graduate of the University of Nevada. His B.S. in C.E. was received in 1933. Since 1946 to the present, Mr. Millard has been associated with F. W. Millard & Son, Consultant Engineers in Ely.

(Mr. Millard's photograph was received too late for this issue.—*Editor.*)

Editor's Note: **E. A. Anderson, P. E., is the National Director from the state of Florida. His photograph and biography was received too late for inclusion in this issue.**

It won't hurt you to give a little when it means so much. See your local blood bank.

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Columbus 15, Ohio

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69 Stamford Avenue
Providence, R. I.

(Continued on page 34)

Eric Johnston To Speak At NSPE Convocation Meeting in Chicago; Members Urged to Attend

Eric Johnston, Chairman of the International Development Advisory Board, (Point 4), will speak at the NSPE dinner meeting September 5 in connection with the Centennial of Engineering.

In addition to having held important positions in business and government (President of the United States Chamber of Commerce, Price Stabilization Director, President of the Motion Picture Association) Mr. Johnston is probably one of the nation's most dynamic speakers.

From September 3-13, 1952, the Centennial of Engineering in Chicago will hold its Convocation of national and international engineering societies. The NSPE, who will be an active participant, will sponsor a dinner meeting on September 5, at which time the well-known business leader and government administrator, Eric Johnston, will speak.

NSPE President John D. Coleman urges all Society members and their friends to journey to Chicago in September to attend this outstanding affair. Coleman announced that tickets are available for the Johnston dinner either through Chapter officers or from Washington Headquarters, NSPE. The coupon on this page can be used when ordering from Headquarters.

Convocation Huge Confab

Mr. Frank W. Edwards, P. E., General Manager of the Centennial, and now serving as president of the Chicago Chapter, Illinois SPE, NSPE, reports that more than 50 societies are now participating in the Convocation. Each will have a meeting of its own. Many of the meetings are full scale national meetings which normally are held throughout the country. This year they are concentrated in the eleven-day period, so that the engineer who visits Chicago will have the opportunity to attend sessions on almost every conceivable technical and professional subject of interest to him.

Major Lenox R. Lohr, president of the Centennial Corporation, has described the Convocation as a cafeteria of engineering subjects, where the individual member of the profession can pick and choose from the enormous array of papers presented by outstanding world authorities.

In addition to the normal meetings of individual societies, a special feature of the Convocation will be symposia on the general subjects of food, tools, structures and construction, transportation, mineral industries, chemical industries, communications, energy, health, education and training and professional societies.

Order Your Tickets Now for NSPE Centennial Dinner

National Society of Professional Engineers
1121 15th Street, N. W. Washington 5, D. C.
Sirs:

Yes, I want to attend the NSPE dinner meeting at the Convocation in Chicago on September 5, 1952. I want ..... ticket(s) at $6.00 each, for which I enclose my (check .....) (money order .....) in the amount of $.....

NAME .....

ADDRESS .....

CITY .....STATE .....

With Our Members . . .

NEW YORK ENGINEER CITED

High honors from two sources recently came to NSPE member Charles R. Waters of Buffalo, New York. Union College conferred the degree of Doctor of Engineering upon him and his home chapter, Erie Chapter, presented him with a citation for outstanding service to the engineering profession.

Mr. Waters has been District Engineer of the New York Sate Department of Public Works for many years and has supervised construction valued at over $200,000,000. He is a past President of Erie Chapter.

Shown are: (Left to Right) H. Dale Bossert, President of Erie Chapter; Mr. Waters; Edward J. Nunan, President of the New York State Society; and Henry F. Sproull, immediate past President of Erie Chapter.

Western Chapter Host

Wisconsin Society Schedules Summer Meeting At La Crosse

The summer meeting of the Wisconsin Society will be held in La Crosse on Sept. 12-13, THE AMERICAN ENGINEER is informed. At a regular meeting of the Western Chapter, preliminary plans were laid for the professional engineers' part in "Career Day" at the local high schools next year.

LaCrosse is famed for its scenic beauty and Badger State members are assured that a full program, including many recreational and social events will insure a good time by all delegates.

The Membership Committee of the Wisconsin Society has announced that membership in WSPE has now passed the 800 mark and that a new goal of 1,000 members has been set.

East Bay Chapter Hears City Manager

Mr. John Hassler, City Manager of Oakland, California, recently spoke to the East Bay Chapter on *Taxes and City Government*. John G. Marr, Chairman of the City Planning Commission, spoke on *The Engineer's Role in Oakland Planning*.

Georgia's Summer Meeting Attendance Soars Over 200

About 200 Georgia professional engineers and their wives, together with representatives of the Association of Registered Land Surveyors, attended the Society's sixth annual summer outing, June 20-21, at Radium Springs.

The Southwest Chapter was host to the gathering. At the meeting of the Board of Directors, it was announced that the Georgia Society's membership stands at an all-time high of more than one thousand members.

Wheeling Chapter Hears Discussion On Water Pollution

The Mayor, the City Manager and a City Councilman were guests of the Wheeling, W. Va., Chapter recently and participated in a panel discussion on *The Fight Against River Pollution*.

Robert L. Rocheleau, Executive Secretary of the West Virginia Water Commission, told the assembled engineers that the City of Charleston hopes to save two and one-half million dollars by going ahead with construction plans now.

Edward Ott Nominated For Reading Chapter Presidency For 1952-53

The following persons have been nominated for office for 1952-53, by the Nominating Committee of the Reading Chapter of the Pennsylvania Society:

President, Edward Ott; Vice President, Thomas B. Douglass; Vice President, K. Raymond Titlow; Directors, Paul H. Robbins and Karl B. Shelley; Alternate State Director, William M. Marr.

Calumet Chapter Talks About Suburbs

Are Suburbs Necessary? was the subject for discussion at a recent meeting of the Calumet Chapter of the Indiana Society at a joint meeting with registered architects. Charles Levin, a Hammond attorney who has made an extensive study of the problem, outlined some of the problems confronting communities with a large suburban population.

Pennsylvania Public Relations Group Set To Do "A Big Job"

The Pennsylvania Society has come up with a good idea which may be of interest to other state societies. It has expanded its Public Relations Committee to include representation from every chapter in the state.

The state's new *Public Relations Bulletin* notes the interesting reason for this: "Heretofore, the State Public Relations Committee has been composed of a Chairman and four or five members selected from various parts of the State. Experience has proven that there was too much to do and not enough men to do it. Chapters with members on the State Committee took an interest in the State Program. Chapters without representation had no knowledge or interest of and in the Program. Chapter Public Relations Committees had their own Programs and followed those programs independently of the State Program.

"This year, the PSPE Public Relations Committee is made up of the Public Relations Committee Chairman of each of the twenty-two Chapters together with the Past Chairman, the State Executive Secretary and a Chairman appointed at large. This is a committee of twenty-five members. It is a large committee. It has to be large because it has a large job to do. In this organization, each Chapter is equally represented on the State Committee. The Chairman of each Chapter Committee is a member of the State Committee and knows at all times what the State Program is and is urged to supplement this Program through the efforts of his Chapter Committee."

Can Anyone Top North Dakota's Record?

Joseph R. Kirby, Secretary of the North Dakota Society, writes that he believes the North Dakotans have the best "man-mile" record per member attendance of any state at the annual meeting at Tulsa. With 144 members, North Dakota had five representatives: President R. H. Myhra, Vice President, E. J. Booth; Mr. Kirby George Tesky, National Director; and Ivan Jensen. They traveled over 4,000 miles, making about 28 man-miles per member.

Bomber's Story Told

A film showing the history and development of the B-47 jet bomber was shown before the Wichita Chapter of the Kansas Society at its last meeting.

N. Y. LEADER

Recently-elected President of the New York Chapter of the New York State Society is Dean Herbert F. Roemmele. Mr. Roemmele is Professor of Mechnical Engineering, Dean of Students and Director of Industrial Relations at the Cooper Union.

Hudson Chapter Nominates Officers For Next Term

Hudson County Chapter of the New Jersey Society has nominated officers for the ensuing term. They are: President, Malcolm Macfarlane and Frank Ballou; Vice President, Stephen Harnett, Secretary, Jeremiah Roach; Treasurer, Roy Henwood; Financial Secretary, E. Ferber Smith; Recording Secretary, Nicholas Perrin; Trustee, Eugene Koenig.

Dean Roemmele Installed As Head Of New York Chapter

Herbert F. Roemmele, Professor of Mechanical Engineering and Dean of Students at Cooper Union's School of Engineering, was installed recently as president of the New York City Chapter of the New York State Society of Professional Engineers.

At the annual meeting of the group, held in the Statler Hotel, two certificates for distinguished service were presented. Dr. Anatole Gruehr, senior engineer of the Consolidated Edison Company and a director and former president of the chapter, received a certificate for service to the society. Hartley W. Barclay, industrial advertising manager of *The New York Times*, received one for service to American industry in his efforts to improve communications between industry and the public.

Knoxville Makes Plans To Form Auxiliary

Knoxville Chapter of the Tennessee Society heard Mr. and Mrs. R. A. Merrill of Chattanooga speak on "Auxiliary Activities That Assist in Promoting TSPE Aims and Ideals." Mr. and Mrs. Merrill assisted in forming a Ladies' Auxiliary in Chattanooga. Knoxville ladies were special guests for the evening and plans were made to form an auxiliary in that city.

(In reading the Minnesota Society's *News Letter*, we note some sage advice which the Minnesotans picked up from the publication of the Association of Professional Engineers of the Province of Ontario. It is reprinted here because we feel that members will be interested in it.)

"Ethics" Are Really Courtesy

"These days much is being written about the confusion between legal and moral responsibility. A cynicism which says 'as long as it is legal, it is acceptable' is only too current. The next step is even worse, 'If I can get away with it, okay.'

"Becoming a member of a profession automatically means undertaking an ethical viewpoint, and as the medical man swears his oath to Hippocrates, so does the engineer swear by cold iron.

"Ethics, however, cannot be broken down to a simple list of 'do's and don'ts.' They embrace much more than that, and yet in reality, true ethics are as basically simple as good manners—as universal as the Golden Rule. Although opportunism may pay off immediately, it is ultimately detrimental both to the individual's pocket and his self respect, and to the profession as a whole.

"When you tack your degree after your name, when you are qualified to add those important initials, P.E., you are a member of a fraternity, and it is up to each member to abide by the house rules, and try to bring credit to the house. Your actions speak more tellingly than idle phrases."

Georgia President-Elect

Georgia Tech. Dean Deplores Waste Of Engineering Talent

R. L. Sweigert, President-elect of the Georgia Society of Professional Engineers, and Dean of the Graduate Division of the Georgia Institute of Technology, spoke to the Savannah Chapter recently.

Dr. Sweigert said he is looking forward to the time when engineering is recognized as an end, not a stepping stone to an administrative position. He said the only shortage in engineering is not in bodies but in brain power. He attributed part of this to engineers being lured into technical jobs and called it a big waste. Engineers are given too many low-level jobs and are not being called upon to use their full capacities, he said.

Illinois' Capital Chapter Makes Series Of Good Resolutions

The Capital Chapter of the Illinois Society has a good idea—it has set definite goals for itself to accomplish during the next year. Maybe this might be a good idea for your chapter! Then a definite record of accomplishment can be charted. Here's the Captial Chapter's goals:

1. *225 members this year.*
2. *One half of the membership in attendance at meetings.*
3. *At least one interesting newspaper article each week.*
4. *For the City of Springfield to adopt an over-all city plan.*
5. *Adjourn business meetings not later than 10:00 P. M.*
6. *Seventy-five per cent of membership belonging to outside groups interested in civic affairs.*
7. *At least one definite task for each committee to accomplish during the year.*

Engineer Discusses Pre-Stressed Concrete

C. V. Vaught spoke on *Pre-Stressed Concrete* at a recent meeting of the Springfield, Ohio, Chapter. Mr. Vaught has spoken before several OSPE chapters on this relatively new field of engineering.

Westchester Chapter Has Dinner Dance

More than a hundred engineers and their wives attended the Ladies Night dinner dance of the Westchester County Chapter of the New York Society.

West Virginia Meet At White Sulphur Spring On August 21-2

The West Virginia Society will hol its annual meeting August 21, 22, an 23 at The Greenbrier, White Sulphu Springs, President W. O. McClusky informs. A full schedule of events i planned with a separate program fo the ladies.

CALIFORNIANS TAKE OFFICE

New officers of the Peninsula Chapter of the California Society are shown at a recent meeting in San Mateo. Left to right are: Harvey Holm, Secretary; Richard Carlson, President, C. D. Allen, Vice President, and Ed Hayes, Treasurer. Not shown are Directors Bob Dalton, George Erskine and Nate Graves.

Canton Chapter Holds Ladies' Night

The Canton Chapter of the Ohio Society recently had a Ladies' Night program with dancing and cards. Mrs. Luther Fawcett, President of the Ladies' Auxiliary of the Mahoning Valley Chapter, spoke to the Canton ladies about forming a ladies' auxiliary.

Lehigh Holds Picnic

The Lehigh Valley Chapter of the Pennsylvania Society recently held a buffet picnic lunch at Hunsicker's Grove.

Help! Help!

Is The American Engineer on your chapter mailing list? We'd like to carry news about what's happening in your chapter, but we need your help to do it. Why not send us a copy of your News Letter, or if you have none, why not send in a short write-up of any outstanding events? Thanks. —Editor.

Ohio's Franklin County Chapter Forms Ladies' Auxiliary

The second women's auxiliary of the Ohio Society was officially launched at the June picnic of the Franklin County Chapter. With the installation of officers by OSPE vice president C. P. Smith, several years of background work were brought to a happy climax.

The following officers were elected: Mrs. C. E. Bischoff, president; Mrs. George W. Alsdorf, vice president; Mrs. Leonard Ucker, secretary; Mrs. Robert McKee, treasurer; and Mrs. L. P. Burgess, Mrs. Charles P. Smith, Mrs. John Heier, Mrs. Cecil Rose, and Mrs. Frank M. Williams, board of directors.

The objective of the auxiliary is to promote public interest in the engineering profession; to inspire unity by encouraging friendly social and educational contacts among professional engineers and their families, and to assist in the social activities of the Franklin County Chapter of OSPE. The group now has 108 charter members.

A Lot Of Spark, Eh?

Members of the Rockford Chapter of the Illinois Society recently held an "All Electric Night." Representatives of two electric motor companies explained the latest developments in that field. The discussion was purposely designed to give non-electrical engineers an insight into the workings of the electric motors.

Recognition For Society

Pennsylvania's Governor Fine Appoints 4 To State Boards

Two Pennsylvania members have been named to the State Board of Engineering Registration by Governor John Fine. One, Professor Robert C. Gorham of the University of Pittsburgh, had been previously given an interim appointment by former Governor Duff. He was reappointed for a full term by Governor Fine.

The other, Francis D. Friel of Philadelphia, was appointed by Governor Fine to fill the vacancy created by the death of Charles Haydock. The American Engineer congratulates Messrs. Friel and Gorham and also the Pennsylvania Society for the recognition that has come to its members.

In another move, Governor Fine appointed two other PSPE members, William F. Lotz of Philadelphia and Leland W. Cook of Pittsburgh, to a committee of six members to work with the Department of Labor and Industry on the revision of the State Building Codes.

1,000th GRAD GETS EIT CERTIFICATE

Mrs. Virginia Sabo, the 1,000th person to be awarded the B. S. degree in Civil Engineering from the Missouri School of Mines and Metallurgy, who has applied for enrollment as an engineer-in-training in Missouri, will have her enrollment fee remitted and will be given EIT membership in the Missouri Society and in NSPE for 1952.

Shown in the picture are Professor Joe B. Butler, Chairman of the Civil Engineering Department and a National Director from Missouri, Professor Leon Hershkowitz, Mrs. Sabo and Dean Curtis L. Wilson. Dean Wilson is a former Chairman of NSPE's Committee on Education.

Cleveland Chapter's Membership Drive Adds 70 To Roll; Ambitious Goal Set

The Cleveland Chapter held a Membership Drive dinner last April at which about 100 prospective members were invited as part of its membership drive. Apparently the chapter's go-getting tactics have paid off, for a recent issue of *The Cleveland Engineer News Letter* announces that a total of 70 new members have been admitted to the Society since the first of the year.

Arthur B. Heiberg, Chairman of the Ohio Society's Membership Committee, and L. D. Cleverly, Board Director for Membership of Cleveland Chapter, announced that they have set a goal of a 25% increase in membership this year.

Noting that there are 3,000 registered engineers in the district who are not members of OSPE, both called upon all present Cleveland members to get a new member and forward the work being done by the Society.

The Ohio Society is offering $300 to be divided into prizes for individual members and prizes for chapters who excel in the membership drive.

Attention

DELEGATES TO THE EIGHTEENTH ANNUAL MEETING OF NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS.

The Will Rogers Poem which appeared on the back page of the Program of the Eighteenth Annual Meeting of National Society of Professional Engineers which was held in Tulsa, Oklahoma on June 5, 6 and 7, 1952, was used with special permission of the author, Mr. David Randolph Milsten of Tulsa, Oklahoma. The official designation of the poem was omitted from the title and the legend describing the poem was inadvertently omitted from the copy. It is as follows:

LEGEND

"Howdy Folks" has been designated as the official poem of the Will Rogers Memorial Museum by enactment of the regular session of the eighteenth legislature of Oklahoma (1941), and describes the dedication of the Museum on November 4, 1938. The characters mentioned are: Jesse Jones, statesman, Houston, Texas; Irvin S. Cobb, noted writer; George M. Cohan, famous song and dance man; Fred Stone, stage and screen star; Amon G. Carter, publisher, Ft. Worth, Texas; Eddie Cantor, radio and stage comedian; Morton R. Harrison, member of Will Rogers Memorial Commission; Joe Crosson, famous aviator, who returned the bodies of Will Rogers and Wiley Post, by air, from Alaska; Wiley Post, record flier with whom Rogers was flying at the time of his death; Mary Rogers, daughter of Will Rogers; Betty Rogers, wife of Will Rogers; Sally McSpadden, sister of Will Rogers; Jo Davidson, sculptor of Will Rogers statue; Sequoyah, famous Cherokee Indian whose statue is in the Hall of Fame in Washington; Franklin D. Roosevelt, thirty-second president of the United States of America, and O. O. McIntyre, noted columnist. The poem was written by the author of "An Appreciation of Will Rogers," an authentic biography published by the Naylor Publishing Company, San Antonio, Texas. The poem has been set to music by Bainbridge Crist, American composer, and published by Irving Berlin, Inc. All rights are reserved including reproduction in any manner for commercial purposes.

The committee in charge of the convention program regrets that these omissions occurred and through this medium regret is expressed to the author who has on two occasions permitted the Society to use the poem gratuitously. Should a request be made for reproductions of the poem in any form, permission should be sought from the author. Copies of the poem may be procured through The Vincil Company, Tulsa, Oklahoma.

With The Ladies

By Mrs. William Fell
Ladies Advisory Committee

One hundred sixty-two wives of professional engineers were in attendance at the Annual Meeting of NSPE in Tulsa June 5-7. This number is more than half that of the attending engineers, which proportion is believed to be something of a record for an NSPE Annual Meeting.

Thirty states were represented by the visiting ladies. Seventy of the visitors were from states other than Oklahoma; 102 were from cities other than Tulsa.

Fifty-nine ladies were in attendance at the Open Forum Saturday morning when John B. Coleman, President-elect of NSPE and Chairman of the Ladies' Auxiliary Committee, reported to the group on the work of that committee for the year. Mr. Coleman commented on the increase in the number of auxiliaries during the past year and expressed his belief that the unusually fine attendance of both engineers and their wives at the annual meeting could be attributed at least in part to the increased auxiliary activity. He cited that there are now twenty-six auxiliaries in NSPE as compared to the twelve which were in existence at the time of the 1951 Annual Meeting.

Constitution Included

Mr. Coleman reported that a recommendation was made by the Ladies' Auxiliary Committee, and approved by the NSPE Board of Directors, that the model constitution and related materials on ladies' auxiliaries be incorporated in the Manual of Chapter Activities in order that it be readily available to all chapters.

Mr. Harry Kennedy, NSPE National Director from West Virginia, was introduced by Mr. Coleman as his successor to the chairmanship of the Ladies' Auxiliary Committee. Mr. Kennedy expressed to the group his interest in the auxiliary development throughout the nation and his intention of giving his best effort to continuing the work of the Auxiliary Committee.

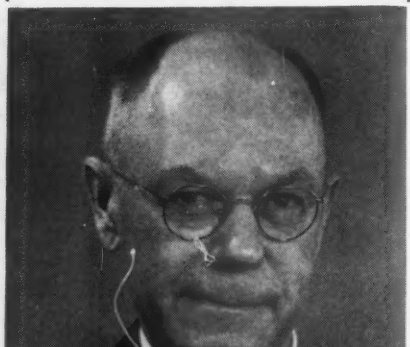
Discussion Held

During a panel discussion held in connection with the Open Forum, approval was indicated to the suggestion of the Ladies' Advisory Committee of NSPE that a vice-chairman from each of the six geographical areas of NSPE be selected to serve with the chairman and a secretary as officers of the Advisory Committee for the coming year. It was proposed that the vice-chairmen act as coordinators in their respective areas, encouraging contacts among wives of professional engineers and serving as two-way communication officers between auxiliaries, prospective auxiliaries and the chairman of the committee. The secretary would aid the chairman of the committee in the general activities of the committee.

Approval was also indicated to a suggestion that a list be compiled of the names and addresses of the presidents and representatives to the Ladies' Advisory Committee of each existing auxiliary and that this list be submitted for publication in the "With the Ladies" column of the AMERICAN ENGINEER so that it would be available to all.

Endorsement was given to the proposal that each auxiliary subscribe to the AMERICAN ENGINEER and submit news of their activities for possible publication in the column "With the Ladies."

LEHIGH HEAD



Mr. Clifford H. Frick who was recently elected President of the Lehigh Valley Chapter of the Pennsylvania Society.

San Jacinto Chapter Sponsors Open Forum

The San Jacinto Chapter of the Texas Society recently held a forum discussion of the technical, political, legal and financial problems involved in the creation of a county Sanitary District. Speakers included a State Senator, the county judge, the chairman of the Houston City Board of Health and other experts on health and sanitary engineering.

The meeting was sponsored as a public service. Wives and non-engineers also attended the meeting.

Postscripts

(*Continued from page* 17)

posed to allowing the temporary monopoly inherent in a patent.

Lamentable Policy

An inventor with 320 patents to his name is Dr. E. F. W. Alexanderson, of the General Electric Co. As a young man he worked with Steinmetz, Marconi and Langmuir and had a chance to observe what they were able to accomplish when given broad opportunities to conduct fundamental research.

He believes it is lamentable that industry is becoming "more and more organized for efficiency of production, with all decisions dominated by sales policy." The result is, he states, that high creative engineering ability is not represented in top management. He suggests that:

"Each large corporation should have a council of science and invention which should be composed of scientists and engineers who have an unquestioned standing as inventors.

"When it becomes known that a council of invention exists, there will be no difficulty in finding the budding inventors. They will present themselves of their own initiative to get encouragement and backing . . .

Many leading research men believe the U. S. urgently needs a national scientific policy. Those who so believe point out that:

1. Inventors and researchers say something must be done to speed up patent administration.

2. The courts, they maintain, are unconscionably slow in handling patent cases, and patent justice needs modernizing—if necessary, through establishment of special patent courts manned by scientifically trained judges.

3. Federal income taxes, the survey shows, are punitive and repressive both for the individual inventor and for industrial research laboratories of the so-called "growth" companies.

4. The government should launch a study, it is urged, of the impact of war upon invention and research, with a view to ameliorating such adverse effects as result from patent sharing. The proposal is advanced that the government might set up a corporation to license manufacturers under patents taken out in the course of government research, thus providing more adequate recompense to the inventor.

5. Immediate implementation of the aims and purposes of the National Science Foundation is recommended by a majority of those covered in a survey. Specifically, the foundation should be granted additional funds for the purpose of making grants for fundamental research to universities and other institutions, scientists say.

Policy Is Needed

6. Substantial federal tax concessions are available to corporations making grants to colleges for research purposes, but companies are not taking fullest advantage of these benefits.

7. A policy should be laid down, it is recommended, for dividing research work between government and industry on the basis of the leaving to industry the research fields in which industry is better qualified.

8. Greater attention must be given to the conservation of scientific man power by selective service authorities, government industrial plants and research institutions and industry, if the nation is to have the trained personnel necessary to preservation of its defenses, a majority of those responding urged.

Coleman

(*Continued from page 5*)

should not willingly join any organization that does not help them to develop and increase their potential for service to their employer, community and country.

Our lengthy efforts to initiate a public relations program under professional guidance has been realized and is beginning to bear fruit. This is indicated by the acceptance by industry and government of our Executive Research Survey projects. However, we need funds which are not now available from our operating budget to provide a continuation of professional counsel. One possible source of additional income is the AMERICAN ENGINEER through expanding the paid advertising. This can be accomplished through professional cards and contractors' listings, in addition to the usual industrial and institutional types of advertising. I firmly believe that the job can be done if our members will assist by using their influence.

We have a great responsibility during these times of increased demand for engineering talents. We must see that every effort is made to utilize present available engineering personnel wisely and at the highest potential. Our Second Executive Research Survey Report, to be issued this fall, is an exhaustive study on this very subject.

This is truly our hour and our era in the engineering profession and the opportunity is unlimited but we must not forget that no plan will work unless we do. If we can but arouse our own members and other engineers all over the country to the need for all-out integrated efforts, we should be able to see in such a brief period as one administrative year a long step forward toward full professional status and recognition for our profession.

We can sit back and do nothing to oppose the drift of engineering towards the status of a regulated business or trade; we can continue to hang back from participation in community, state, and national affairs where engineering technology and experience can help. Or, on the other hand, realizing that service and idealism are over and above normal or legal requirements, we will join in this common cause and present our philosophy and program to every eligible engineer; we will do everything possible by word and deed to lift the status of our profession to an unquestioned professional level; and finally, we will endeavor to be good citizens first as well as good engineers. Then we can go forward with the knowledge that unborn generations of engineers will be in our debt.—***End.***

Letters

(*Continued from page 3*)

an easy one. The ESA has most of the cards stacked on its side already.

CARL M. RATLIFF, JR. P.E.,
Drexel Hill, Pennsylvania

No Interest? . . .

Dear Editor:

To me one of the most disturbing things about the report in the April issue on "How to Improve Engineering-Management Communications," appeared in Chapter III.

Since engineering concerns the application of the processes of nature for the usefulness of man, isn't it a rather pitiful thing that only 8% of the men doing this work are apparently interested in the process of actually placing his product in the hands of man, and only 5% are interested in the economic health of the organization with whom they are working?

There will have to be a substantial change of attitude in this respect if more engineers are to be considered for management and community responsibility. Certainly the sales, financial and management people are vitally interested in the progress of engineering programs, why not the reverse?

WALTER A. KNOOP, P.E.,
Newark, N. J.

Steinman And Hell . . .

Dear Editor:

In the May edition of the AMERICAN ENGINEER, there is a story about a lawyer, a doctor and an engineer who go calling on St. Peter. As in real life, the engineer goes to Hell while the others stayed with the old saint.

The story is supposed to be written by Engineer Steinman and as it happens, twenty years ago Eng. Emilio Serra, (most probably a distant relation to Father Junipero Serra) wrote exactly the same story, in the form of a poem and was published in "*Puerto Rico Ilustrado*" a weekly magazine edited in San Juan, Puerto Rico.

This poem has been recited by Eng. Serra in many places and it is widely known in Latin America and I believe in the States and Europe, as it was printed and distributed among the delegates to the First International Congress of Civil Engineering, held in Mexico City in April-May, 1949.

Recently, a translation in Portuguese has been made in Brazil, and permission to publish it in that country has been requested to and granted by the author.

Now, if Eng. Steinman wrote his story prior to 1932, credit should be given to him; otherwise the honor goes to Eng. Serra who, in spite of being a brilliant civil Engineer, is a remarkable satiric poet.

FRANCISCO FORTUNO, P.E.,
San Juan, P. R.

Dear Sir:

It was with interest that I read your editorial comments on "Engineers and Hell," an article which appeared on page 19 of the May, 1952 issue of the AMERICAN ENGINEER.

I will not take issue with you that the article was written by Mr. D. B. Steinman as I am in no position to pass judgment. However, I will state that when I first acquired the article—some twenty years ago—its author was then indicated as not known.

Knowing as a positive fact that the item in question is at least twenty years old I would like to take issue with you on your statement, "Here is one of the great bridge builder's latest parables," by asking: If this is one of his latest parables, just what has Mr. Steinman been doing parable-wise during the past two decades?

JAMES W. DARLING, P.E.,
Clifton Heights, Pa.

► The two letters printed above were forwarded to Dr. Steinman for his comments. His letter in answer follows. —*Editor.*

I have your letter of July 7 enclosing inquiries from Francisco Fortuno and James W. Darling in reference to my parable about the engineer who went through Hell.

This parable was composed by me around 1930. I have somewhere my original notes written on a train between Portland, Oregon, and New York when my wife was with me. During the next two years I used the story repeatedly in my after-dinner speeches and convention speeches until the engineers around New York State and the adjoining states were thoroughly familiar with it. In 1931 I used it at a dinner meeting held in New Jersey in honor of Morris Goodkind, Bridge Engineer of New Jersey. Gov. Larson, who was one of my fellow speakers, was so impressed with the story that he asked me to write it out for him, and that was the first time that I wrote it out from my original sketchy notes. I sent typed copies to various publications, and it was first published in the AMERICAN ENGINEER in January, 1932, Vol. 2, No. 1, page 8, under the heading "The Engineer —A Parable." Also about the same time it was published in *Professional Engineer* and in many other publications. A quick glance at my scrap book shows it was published in *Electrical Engineering* in April, 1932. . . . After a number of years of such publication and republication, my parable attained the distinction of becoming anonymous.

I subsequently did my best to catch up with it and to secure the re-attachment of my name to the story which I had composed. It even re-appeared some years ago in the AMERICAN ENGINEER, also as "anonymous." You can find in the files my letter to the Editor of the AMERICAN ENGINEER at that time calling his attention to the fact that I was the original author of the story and begging for a credit correction. I do not recall whether such credit correction was published. I had to do the same thing with the Baltimore *Engineer*, and they published a credit correction in their succeeding issue informing their readers that the author of the story was D. B. Steinman. . . .

This year I decided to freshen up the story and to start it on a new round with my name re-attached to it as the original author. In its new form it has already appeared in three magazines starting with the AMERICAN ENGINEER.

It is bad enough to have the credit lost by seeing one's work published for years as anonymous, but it is worse to be subject to insinuations when one endeavors to re-establish his credit line. Years ago T. Keith Legare, of the National Council of State Boards, reproduced my story and had it widely circulated, with full credit line to me. I am sending copy of this letter to him so that he can confirm my claim of original authorship.

I have not seen the publication of my story in poem form which was published in Puerto Rico Ilustrado by Eng. Emilio Serra twenty years ago, according to Eng. Francisco Fortuno. I am certain that the publication in Puerto Rico followed my publication in the AMERICAN ENGINEER in January, 1932. . . .

D. B. STEINMAN, P.E.,
New York, N. Y.

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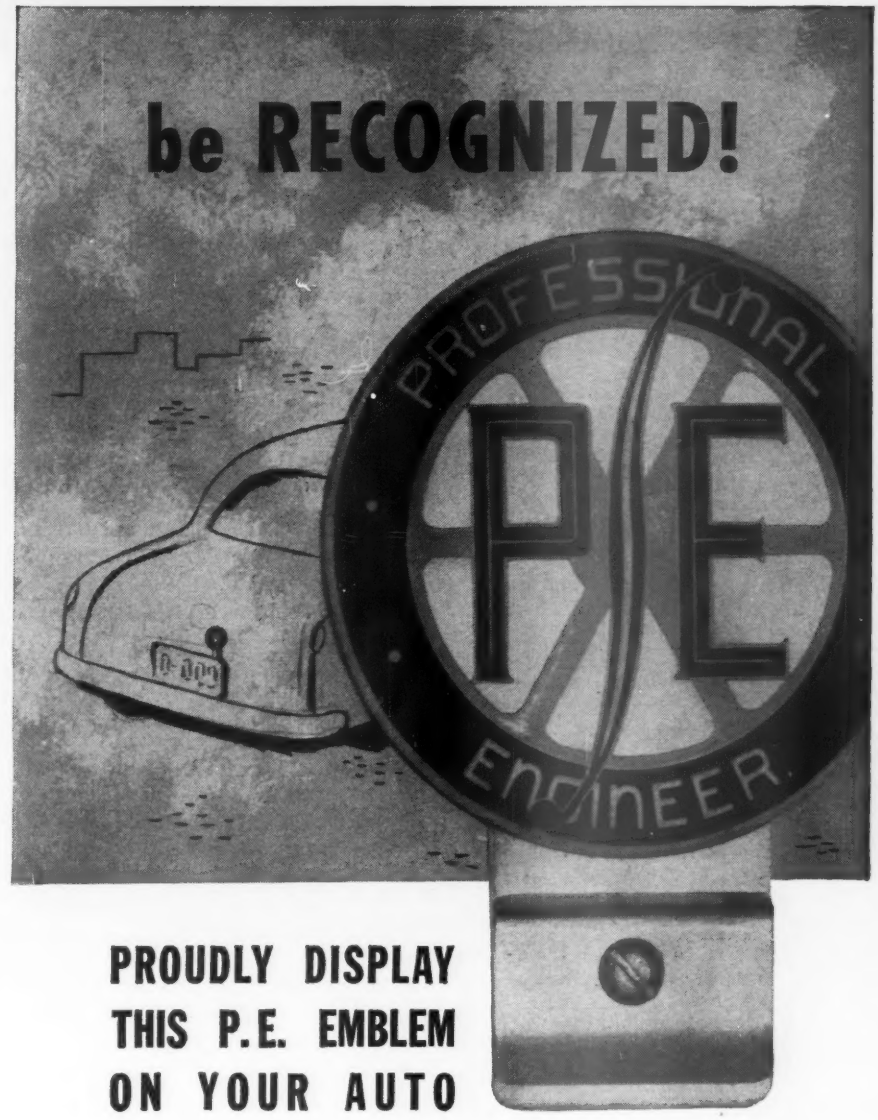

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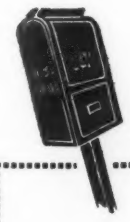

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